O&G Magazine

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Menopause

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists

O&G Magazine

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Menopause

Women's health

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The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Excellence in Women's Health

From the President

Prof Steve Robson
President

Already we find ourselves well into 2017, and the autumn issue of O&G *Magazine*. This issue is devoted to the very important topic of menopause. Many of you – older Fellows like me anyway! – will remember the media reporting of the Womens Health Initiative study's hormone replacement therapy results. Menopause is a topic of the highest importance in women's health, so it is wonderful to see such a relevant set of articles. In this issue, you will be able to read about a spectrum of matters from fertility management in premature ovarian failure to osteoporosis. As always, the O&G *Magazine* Advisory Group have managed to source articles from the best and brightest in this important field.

Another year, another maternity framework

Australia, like New Zealand, is one of the safest places in the world to give birth and to be born. This happy situation is the result of many years of collaborative effort and owes much to community health in general, excellent pre-pregnancy care by general practitioners, skilled collaborative care by a range of health professionals during pregnancy and birth, and high-quality care in the postnatal period. We have an enormous amount to be proud of.

Recent investigations, widely reported in the media, about maternity services where collaboration has failed – Rockhampton in Queensland, Bacchus Marsh in Victoria, and elsewhere – continue to highlight the critical importance of collaboration between all those who provide collaborative care. For this reason, I am deeply disappointed and concerned by the decision of those responsible for the National Framework for Maternity Services to exclude obstetricians from the Working Group developing the framework.

I have been working with a group of senior College Fellows to ensure that the voice of obstetricians is heard. I have contacted the Chair of the Maternity Framework group, as well as responsible Health Ministers. I have also worked on this issue with the Federal President of the AMA, and College Fellow, Dr Michael Gannon, and the President of NASOG, Dr Gary Swift. By the time you have read this, a College group will have met with the members of the Working Party, and I can assure all Fellows, GP obstetricians and trainees, that our voice will be heard. I will keep you updated.

MBS Review

We are all interested in the progress of the MBS Review, and now that the recommendations on maternity care have been submitted to the Health Department, work on the gynaecology section of the MBS continues. I would like to thank Prof Michael Permezel and all College Fellows and Diplomates who are involved in this review for their efforts. Each of the discipline groups are busy reviewing the MBS item numbers and the overarching review group meet in mid-February. Again, this is an area I will keep you updated on.

Health needs of vulnerable women

As I have mentioned, Australia and New Zealand are fortunate to have some of the highest standards of healthcare for women of any place in the world. This is a credit to the enormous enthusiasm so many Fellows have for their work and responsibilities. However, there are still many areas where there is substantial room for advance and improvement. I would like to briefly outline these for you.

Indigenous women

Indigenous Australians face many disadvantages, and you will all be aware that maternity outcomes are particularly concerning. I have met with Minister Ken Wyatt, who has responsibility for Aboriginal Health, and his staff with a view to setting up a multidisciplinary group to try to move forward in this important area. I am delighted that Dr Marilyn Clarke has stepped in to Chair the College Aboriginal and Torres Strait Islander Women's Health Committee – taking over from Dr Jacqueline Boyle who was a wonderful and hardworking Chair – and I have high hopes that we can work together to achieve something for Indigenous women.

Migrant and Refugee women

A million women in Australia do not have English as their first language. Women who have come to Australia from elsewhere in the world face great challenges in accessing good healthcare. To help address this, your College has received funding from the Commonwealth Government, the Paul Ramsay Foundation and other generous donors to develop a plan for better access to healthcare for this large and very important group of women and their families. A diverse and committed working group met at College House late last year, and there is an atmosphere of friendly

RANZCOG President Prof Steve Robson meeting with Assistant Minister for Health and Aged Care, Hon Ken Wyatt, at his office in Parliament House. The health and wellbeing of Indigenous women must be a high priority for the College.

and determined collaboration. The group is doing great work and, again, I will keep you updated.

Violence against women

Violence is one of the leading causes of maternal mortality in our community, but this is only the tip of a very large iceberg. Many of you will have read of the terrible assault on one of our trainees last year – it was very widely reported in the media and made international headlines. This made the problem very personal and it is an area in which the College is in a position to now do more. I am setting up a working party to examine ways we can raise awareness of violence against women and to engage the College fully in this area. The issue of violence will be of concern to all of you, and we have the resources to make an impact. Over the course of the year, expect to hear more about this issue and how we all can help.

> 'Australia and New Zealand are fortunate to have some of the highest standards of healthcare for women of any place in the world. This is a credit to the enormous enthusiasm so many Fellows have for their work and responsibilities.'

Clinical variation

Clinical variation is the phenomenon of different rates of treatment – typically surgery – in different regions that is not explained by differences in the prevalence of disease. The Atlas of Clinical Variation has been developed by the Australian Commission on Safety and Quality in Health Care (ACSQHC) and documents the varying uptake of a number of key procedures and treatments across Australia. There are obviously many reasons for such variation and it is foolish to take rates of clinical practice at face value. However, procedures that have considerable variation – they are commonly performed in some areas, uncommon in others – definitely should lead to further analysis.

In some cases, lack of leadership from the College in the form of an ambiguous confusion of clinical guidance may be to blame. As the Chair of the Women's Health Committee for four years, it certainly could be my fault! I am meeting with representatives from ACSQHC regularly to review current data and plan future data collections. I hope these will assist us with being able to help you in your management of patients. An algorithm regarding stepwise management of menorrhagia is under development, for example, and I should be able to bring you more information about this soon. In the meantime, you can access the Atlas yourself via the ACSQHC website.

Get with the program

From the start of May this year, the Renewed Cervical Screening Program will begin. Most of you will know that we are moving from second-yearly cytology-based screening to five-yearly DNA-based screening. Along with the Renewal come a number of new guidelines, algorithms and reporting requirements. In this issue of *O&G Magazine,* information about these exciting changes is presented. Please make sure you read the information, and familiarise yourself with the changes to the patient program.

ASCCP 2017 UPDATE COURSE

29th - 30th July, Grand Hyatt Melbourne

Do you need an update on the new Australian cervical cancer screening guidelines? Are you a beginner or experienced colposcopist? Then you should register for this 2 day course.

The course will cover:

- Basics and principles of Colposcopy
- HPV and its role in cervical disease
- HPV testing and result interpretation
- Challenges for colposcopy in the Renewed Australian Cervical Screening Program
- Difficult management issues in cervical disease with ample time for discussion
- Quality issues in routine practice.

ASCCP 2017 TREATMENT COURSE

25th November, Chris O'Brien Life House, Sydney

Do you want hands-on experience in cervical dysplasia treatment modalities

The course will cover:

- Covering technique of ablation and exicision loop and laser
- Principles of electro-surgery and laser
- Safety issues and consenting
- Analysing risks and morbidity
- Specimen handling and Pathology
- Hands-on practical laser and loop diathermy training

For further information and to register, visit:

www.asccp.com.au

or call the ASCCP Secretariat on +61 7 3368 2422

Wanted: Teaching Colposcope with video capacity for Vanuatu

Have you got a colposcope with video capacity? We can find it a good home in Vila Central Hospital, Port Vila, Vanuatu, and use it for teaching at the PSRH/ASCCP Colposcopy workshop during the Pacific Society for Reproductive Health 2017 Conference to be held in July 2017.

Please contact PRSH if you can assist:
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From the CEO

Alana Killen
CEO

While for many the mere mention of the words 'strategic planning' can cause eyes to glaze over, for others (such as managers and administrators), the term can provide comfort and order in a world that is often changeable and unpredictable. It provides a map for the coming period that enables those responsible for the smooth running of an organisation to be prepared and organised and to ensure that appropriate resources are allocated for those areas prioritised by the decision-makers (that is, Council and Board). Knowing what is coming and being aware of the environment is critical for effective planning and to make sure that we are ready for changes as they arise.

The RANZCOG Board have identified four priority areas for the next term and have started working on key initiatives in these areas. You will already have heard about the goal for improved engagement with members – and a second key area of focus is communication and advocacy. The President and other key College representatives have been busy meeting with state and federal ministers, their advisors and leaders of other agencies. These meetings aim to promote stronger connections with partner organisations and build relationships that will ultimately lead to better health outcomes for women. By continuing to raise the profile of RANZCOG, the College will build on its reputation as the key organisation representing and advocating for women's health in Australia and New Zealand.

Other goals include ensuring RANZCOG is a sustainable and contemporary organisation that benefits members in their professional lives. While it is recognised that trainees benefit from the program by gaining a qualification that enables them to practise as a specialist or subspecialist in the field of obstetrics and gynaecology, the ongoing benefit for Fellows may be less tangible. RANZCOG is a highly respected organisation that has a reputation for educational leadership in postgraduate medical education; however, as competing demands continue to impact on Fellows' professional lives, the College must endeavour to maintain relevance and provide benefit to ensure it is meeting the needs of all members.

The coming year will see some changes to the CPD requirements for Fellows, and the staff and committees will be working hard to make sure any changes are implemented as seamlessly as possible. The goal will be to minimise the administrative burden on Fellows, while ensuring compliance with the requirements of the Medical Boards of Australia and New Zealand. The College's improved online processes will assist in streamlining services and hopefully keep frustration levels to a minimum!

The enquiry from the 44th and now 45th Parliament's Senate Community Affairs References Committee into bullying and harassment has now been completed. The report listed a number of recommendations that covered complaints handling and sanctions processes. The report has also recommended further inquiry into the adequacy of the regulatory framework; particularly, the roles of the various bodies, such as AHPRA, National Boards and health complaints entities in each state and territory. All Colleges are now acutely aware of the need to promote positive training experiences and workplace environments.

In the coming year, RANZCOG will continue to work on the 'Supporting Respectful Workplaces' initiative, which will include the provision of online and face-to-face training opportunities aimed at raising awareness and supporting positive working relationships. The College is mindful of the need to support Fellows and trainees in this endeavour – including the need to communicate and receive feedback in an appropriate manner.

The fourth area of focus is education programs and at the end of 2016, RANZCOG received a positive report from the Australian Medical Council, the body responsible for the accreditation of medical colleges. The College is progressing well in all areas of accreditation, owing to the hard work of many who continue to work tirelessly to ensure the College programs and governance are of the highest standard.

I would like to take this opportunity to welcome the incoming Board of RANZCOG and the new President, Prof Steve Robson. We look forward to supporting the Board in achieving the goals they have set and in implementing the strategies they have outlined for the coming year.

Editorial

Dr John Schibeci
DRANZCOG

It is a common belief that menopause is a quintessentially human phenomenon. It's a matter of definition really, as to have menopause, must there have been menstruation? Most animals don't menstruate as they merely resorb the endometrium should fertilisation not occur. Many of the non-human primates, such as chimpanzees, gorillas, orangutans and macaques, do in fact menstruate, but do so until death and, ipso facto, can bear young into old age. They therefore don't go through menopause.

Recently, however, it has become known that two other species go through menopause. Surprisingly, these are killer whales and pilot whales. Most likely these animals don't menstruate, but what they uniquely do, along with humans, is stop bearing young many years before they die. That is, they undergo ovarian failure at a younger age. There is potentially a 40–50-year gap between 'menopause' and death. This allows them, within their societies, to adopt the important role of grandmothering, as the males die at a much younger age of around 30. In the case of the killer whale, with years of experience behind them, they teach their grandchildren how to find their important, but elusive, source of food, namely salmon. These findings have only been recently published in *Current Biology* by Croft et al in a study of two families of killer whales off the NW Pacific Coast of the USA and Canada.

One might also feel that perhaps menopause is a modern condition because of the lower life expectancy in former times. Life expectancy is skewed by the high infant mortality rates of previous eras, but this has no effect on human longevity, which hasn't altered in millennia. Therefore, there have always been an ample number of women experiencing menopause and living on to a ripe old age. References to menopause were made even by Aristotle.

One of my prized possessions is a book salvaged from a jumble sale titled 'The Family Medical Guide' by Dr George Fullerton, published in Sydney in 1878. It makes you realise how far we've advanced in our knowledge since then, yet at the same time, in some subjects, how little things have changed. Luckily, when it comes to menopause, we have come a long way. This book was written in Victorian times, when women could be segregated in asylums for being hysterical during menopause. Although the term menopause (*la menepausie*) had been first coined in 1821 by the French physician, Charles Pierre Louis de Gardanne, in this book it is simply termed 'the cessation of menses'. Nowhere are hot flushes, night sweats or vaginal dryness mentioned. Attention, however, is directed more towards management of perimenopausal bleeding. Fullerton wisely wrote, 'it is certain that the female constitution requires judicious management at this crisis.' Treatments such as cold applications to the privates, acetate of lead with vinegar and laudanum, cream of tartar in an infusion of cinnamon, strict bedrest, oral podophylline and vaginal plugs were all in the mix.

A further look along my bookshelf reveals a volume from 1915 titled 'An Index of Treatments by Various Writers'. By that time, menopause had become the appropriate term and 'headache, flushings and perspirations' were being acknowledged as symptoms to be dealt with – the most efficient remedy? Potassium bromide! For perimenopausal bleeding lead acetate was passé and liquid extract of ergot with strychnine the way to go.

Around that time in the early 20th century, investigations into ovarian function and chemistry were in full swing and these more archaic treatments would soon pass into oblivion. By 1929, Edward Doisy from St Louis had isolated oestrone, the first female hormone to be discovered, from the urine of pregnant women. In 1935, oestradiol was isolated from the ovary and before long chemists had produced ethinyl oestradiol and diethylstilboestrol. By 1941, Premarin was being manufactured. Progesterone had a similar meteoric rise from its first discovery in 1933. The progress to hormone replacement therapy (HRT), and oral contraception, over the following decades was a given.

Menopause is truly an experience that varies not only from epoch to epoch, but also from culture to culture and woman to woman. This is where our role starts. Some women breeze through the menopause, but a good 20 per cent really suffer. It is hoped that this edition of O&G *Magazine* will enlighten us here in this post-WHI era where the term 'HRT' has been consigned to the history books and 'MHT' *de rigeur*.

At O&G *Magazine* we like to think that each issue of the magazine is like a mini textbook and with this philosophy in mind, we hope the wide selection of articles on this topic (with grateful thanks to our wonderful authors) will be helpful to the gynaecologist, GP and trainee alike, as we help our patients to put this potentially difficult time in their lives behind and enjoy, like the killer whale, the grandmothering years, with or without the grandchildren.

Menopause: the basics

Dr Leah Grace
MBBS
RANZCOG Trainee

Menopause is a clinical diagnosis made after a period of 12 months amenorrhoea, resulting from the loss of ovarian follicular activity.[1] The effects of menopause on a woman's physical, mental and emotional health are diverse. Menopause symptoms can have a significant impact on a woman's quality of life and are a common complaint to health practitioners.

The average age of menopause is 51. Menopause is considered early if it occurs before 45 years of age, and if before 40 years of age is termed primary ovarian insufficiency, which affects approximately 1 per cent of women. When counselling a woman in this situation, is it important to address not only her menopausal complaints, but also opportunistically appraise their general health and wellbeing. Health consequences of hormonal changes at menopause include:

- Vasomotor symptoms (VMS): hot flushes; night sweats
- Urogenital and sexual symptoms: vaginal dryness and dyspareunia; vaginal itching and burning; urinary frequency and urgency; and low sexual desire
- Psychological symptoms: sleep disturbance; depressive symptoms; anxiety and irritability; reduced memory and concentration
- Physical symptoms: fatigue; headaches; myalgias and arthralgias; formication
- Metabolic changes: central abdominal fat deposition; insulin resistance; increased risk of developing type 2 diabetes mellitus; dyslipidaemia
- Cardiovascular changes: impaired endothelial function
- Skeletal changes: accelerated bone turnover and bone loss; increased bone fracture risk

Treatment principles

Always consider this an opportunity to holistically review a woman's health. Discuss various lifestyle changes to improve general health and wellbeing, including smoking cessation, weight reduction, regular exercise and healthy diet. Important educational points include discussion of the different stages of menopause, the average duration of menopausal symptoms (approximately four years) and long-term health implications, such as osteoporosis and fracture risk and augmented cardiovascular disease risk. Advise women of the various treatment options, including menopausal hormone therapy (MHT), pharmacological options and alternative therapies.

Non-pharmacological treatments

Lifestyle interventions that show some promise of effect include meditation, cognitive behavioural therapy and relaxation techniques. Lifestyle modifications that promote general wellbeing should also be encouraged, including regular exercise, smoking cessation and weight reduction. These may help improve some bothersome symptoms, as well as reduce a woman's risk factors associated with either menopause itself or MHT use. Additional self-management strategies include dressing in layers and avoiding VMS triggers, such as excessive alcohol and caffeine intake.

MHT

The primary indication for MHT is for the relief of troublesome menopausal symptoms, typically VMS. All women with a uterus must receive progestogen supplementation in addition to oestrogen to prevent the dose-dependent risk of endometrial hyperplasia and cancer with unopposed oestrogen use. Women who have had a hysterectomy may receive unopposed oestrogen, which can be beneficial in terms of reducing breast cancer and coronary heart disease risk.[2] Women who present with only vulvovaginal atrophy (VVA) symptoms may be treated with local low-dose oestrogen without the need for any progestogen cover.

MHT preparations vary in terms of type of hormonal preparation; dose; route of administration, including oral, gel, transdermal, vaginal and intrauterine; and whether they are used as a continuous or sequential regime. The use of MHT should be with the lowest dose that achieves symptomatic relief and for the shortest duration possible. Women receiving MHT should have at least annual review by their practitioner, including physical examination, an update of the woman's personal and family history, any investigations as appropriate, and discussion regarding lifestyle measures that may improve their symptoms as well as their general health. There is no need to place an arbitrary limit on the duration of MHT use. The Women's Health Initiative study has demonstrated safe use of MHT for at least five years in healthy women under the age of 60. Ongoing review beyond five years, or initiating MHT over the age of 60 or more than 10 years after menopause, needs individualised assessment of potential risks versus benefits. Unscheduled vaginal bleeding in women with a uterus may occur within the first three months of commencing MHT; however, further investigation is warranted if this persists beyond three months.

Overall MHT benefits

- Most effective treatment for VMS and VVA
- Prevents menopause-associated acceleration of bone loss and risk of osteoporosis-related fractures. This protection is also conferred by tibolone and SERMs (for example, raloxifene, bazedoxifene). This protection declines after cessation of MHT.[2] Improvement in cardiovascular disease risk if commenced before age 60 or within 10 years of menopause. Evidence suggests that oestrogen-

Table 1. MHT options.

MHT type	Brand (examples)	Route	Comments
OESTROGEN ONLY			
Oestradiol valerate	Progynova Vagifem	Oral Transdermal Vaginal	Transdermal has lower VTE risk profile than oral. Also consider transdermal if abnormal liver function
Conjugated equine oestrogen (CEE)	Premarin	Oral	Contraindications to use: • Uterus present (unless progestogen cover) • History of breast cancer • Caution if risk factors for VTE Vaginal low-dose oestrogen for atrophic symptoms does not require progestogen cover
Oestriol	Ovestin	Oral Vaginal	
17β-oestradiol	Estrofem Estraderm	Oral Transdermal	
PROGESTOGEN ONLY			
Norethisterone	Primolut	Oral	Protection of endometrial lining if used with oestrogen
Medroxyprogesterone acetate	Provera	Oral	
Micronised progesterone	Prometrium	Oral	
Levonorgestrel	Mirena	Intrauterine	
CYCLICAL OESTROGEN & PROGESTOGEN			
Oestradiol / dydrogesterone	Femoston	Oral	Use at perimenopause or if less than 12 months amenorrhoea
Oestradiol / norethisterone	Trisequens	Oral	
17β-oestradiol / norethisterone acetate	Estalis sequi	Oral	
CONTINUOUS OESTROGEN & PROGESTOGEN			
Oestradiol / drospirenone	Angeliq	Oral	Use if more than 12 months amenorrhoea, or after 12 months cyclical MHT
Oestradiol / dydrogesterone	Femoston-Conti	Oral	
Oestradiol / norethisterone	Kliovance	Oral	
CEE / Medroxyprogesterone acetate	Premia Continuous	Oral	
17β-oestradiol / norethisterone acetate	Estalis Continuous	Transdermal	
OTHER			
Tibolone	Livial	Oral	Use if more than 12 months amenorrhoea Does not need progestogen cover Contraindicated in women with current/previous breast cancer

only MHT is cardioprotective, especially if commenced around the time of menopause (the 'window of opportunity' phenomenon); while combined MHT has shown a non-significant improvement in coronary artery disease.[3]

- Reduced colon cancer risk, conferred by both combined MHT and tibolone use.[3]
- Alzheimer's disease – MHT initiated around the time of menopause has shown a reduced incidence of Alzheimer's disease.[1]

Overall MHT risks

- Breast cancer – this is a complex issue and data are conflicting. The possible increased risk of breast cancer with MHT use is small (approximately one extra case per 1000 women using MHT for one year). This risk decreases after cessation of MHT. The risk is mostly attributed to the addition of progestogen to oestrogen therapy and related to duration of use.[4] MHT use in breast cancer survivors is not recommended, owing to a lack of safety data to support its use.
- Endometrial cancer – unopposed oestrogen induces a dose-dependent stimulation of the endometrium, increasing the risk of endometrial hyperplasia and malignancy. This risk persists for years after cessation of use. The addition of progestogen counteracts this.[1]
- Ovarian cancer – the only RCT evidence available[3] does not show any increased risk with MHT use. A recent meta-analysis[5] has shown a very small increased risk; however, this is from a heterogeneous mix of observational data.
- Venous thromboembolism (VTE) – risk with MHT use is age related, as well as influenced by BMI and other prothrombotic factors. Absolute risk is rare in women less than 60

years of age. VTE risk, including the risk of ischaemic stroke, is greatest within the first few years of use and with oral, compared to transdermal, administration.[1]

Tibolone

Tibolone is a synthetic steroid hormone exhibiting oestrogenic, progestogenic and androgenic properties. Beneficial effects of tibolone include improvement in VMS, reduction in bone loss and spinal fractures, endometrial protection, it improves VVA and may improve low libido. Tibolone should not be used in addition to any MHT, rather as an alternative. Side effects may include headache, acne, increased hair growth and occasionally, irregular bleeding. Tibolone has not been shown to increase a woman's risk of VTE, breast cancer, endometrial cancer or cardiovascular disease. Some research suggests an increased risk of stroke in women over the age of 60.

Non-hormonal options

Pharmacological options available to treat VMS are limited. To date, gabapentin is the only non-hormonal agent with equivalent efficacy to MHT for treating VMS; however, its use is often limited due to side effects such as drowsiness, headaches and gastrointestinal upset. Other pharmacological options with less efficacy include antidepressants, such as venlafaxine, and clonidine, an alpha-adrenergic agonist traditionally used as an antihypertensive. These options are particularly useful in women wanting to avoid hormonal therapy either due to medical concerns, such as a personal or family history of breast cancer, or due to personal preference. While these options are less effective in reducing VMS compared to MHT, they have their place in the treatment of postmenopausal women.

Alternative therapies

Women may often present seeking complementary or natural therapies to aid their menopausal symptoms. The difficulty with counselling women regarding 'natural' hormones and other complementary therapies is the lack of clear objective evidence regarding their performance and safety. Many trials exist; however, the results are largely mixed. The ingredients in complementary and herbal remedies may not be stringently regulated in terms of dosage and proven efficacy and may lack rigorous safety testing. For these reasons, careful counselling is required when women enquire about alternative treatments for VMS, such as phytoestrogens and black cohosh.[2]

The decision to initiate, and then to continue or cease, MHT needs to be made by an informed woman in conjunction with her informed medical practitioner. Key issues to consider are the desired treatment goals, symptom severity, the woman's individualised risk profile and her personal preferences. A wealth of resources exist to guide women and medical practitioners in these decisions; however, careful appraisal of the evidence is required.

Menopause is an important clinical issue of which every gynaecologist should have a clear understanding. Given the potentially significant impact that menopause and its symptoms can have on many facets of a woman's life, it is vital that gynaecologists are able to manage this period holistically and confidently.

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Perimenopause: treating the transition

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Menopause is the final menstrual period. The menopausal transition is the time from the onset of menstrual cycle changes or vasomotor symptoms until one year after the final menstrual period.[1] The National Institute of Health (NIH) associates four cardinal symptoms with the menopausal transition: vasomotor symptoms (VMS) of hot flushes and night sweats, poor sleep, adverse mood and vaginal dryness/ dyspareunia, now known as the genito-urinary syndrome.[2] The menopause transition starts at around 47 years and lasts for five to eight years on average. The nature and severity of symptoms may vary between women from different ethnicities and geographical locations.[3] In women over 45 years of age, irregular or absent menstruation, especially in the presence of VMS, is diagnostic of the menopause and usually no investigations are required.[4,5] Women commonly have more than one symptom at menopause, and how bothersome symptoms are will guide treatment.[3]

Hormone therapy (HT) is the most effective treatment for VMS, with reductions in both frequency and severity of around 75 per cent. HT is not indicated for the prevention of chronic disease. Dosing of HT should start low, for example 0.3mg of conjugated equine oestrogens, ≤1mg 17β oestradiol or oestradiol valerate, 25μg transdermal patch and may take up to six to eight weeks before there is adequate symptom relief.[3] It is the inclusion of progestogen that appears to increase breast cancer risk, but this is required to prevent endometrial hyperplasia and cancer risk in women with a uterus. With low-dose oestrogen use, 5mg of medroxyprogesterone acetate for 14 days (sequential therapy) and 2.5mg daily (combined continuous therapy) will give endometrial protection.[6] Observational data show that transdermal delivery minimises the risk of stroke and VTE and also that the type of progestin may alter breast cancer risk. Micronised progesterone has less risk than testosterone-derived products.[3]

HT should not be used in women with unexplained vaginal bleeding, active liver disease, previous breast cancer, coronary heart disease, stroke, personal history of thromboembolic disease or known high inherited risk. These women can be offered non-hormonal alternatives. A systematic review has identifed that clonidine, selected selective serotonin reuptake inhibitors (SSRI) and serotonin-norepinephrine reuptake inhibitors (SRNI) and the gaba-agonist gabapentin are superior to placebo for VMS, reducing these symptoms by around 50–60 per cent compared to 75 per cent with oestrogen.[3]

Heavy periods in women over the age of 40 years should be investigated before starting HT. As HT is not a treatment for heavy menstrual bleeding, a low-dose combined oral contraceptive pill or intrauterine progestogen may be preferable. In postmenopausal women, unscheduled bleeding in the first six months of combined continuous HT use is common and does not necessarily need to be investigated, provided that cervical smears are up to date. Unscheduled bleeding after six months or new onset unscheduled bleeding should be investigated.[3]

Perimenopausal women using sequential HT who are sexually active will also require contraception. Contraception should be used for two years after the last menstrual period in women aged under 50 and one year in those over 50.[4] The method used should consider the woman's medical eligibility criteria. All oestrogen-based contraceptives (pills, patches, vaginal rings) can be used in non-smoking women without cardiovascular or thrombotic risk factors until the age of 50 years and, along with providing contraception, will relieve VMS. Barrier methods (condoms, caps), spermicides and copper-bearing intrauterine devices can be used by women on HT. Intrauterine levonorgestrel (LNG-IUS) provides effective contraception and has the benefits of endometrial protection in addition to treating heavy menstrual bleeding.[3]

Absolute risks are small in healthy women during the menopause transition or within ten years of menopause (Table 1). The increased risk of stroke and pulmonary embolus and the decreased risk of hip fracture disappear within 2.4 years of stopping HT. We now have 13 years of cumulative follow up, in other words, time in the WHI study using HT and follow up after study discontinued. The findings for women aged 50–59 years were that the risk of breast cancer remained for those women who had taken combined HT. For those who had taken oestrogen-only therapy, there was a decreased risk of coronary heart disease (CHD). There was no statistically significant difference in all-cause mortality for either group of women.

The duration of treatment for VMS may need to be longer than previously believed. About 20 per cent of women in their late 50s, 10 per cent of women in their 60s and five per cent of women in their 70s experience persistent symptoms.[2] For older women, transdermal delivery of oestrogen along with micronised progesterone, if they have a uterus, is likely to confer least risk. HT can be stopped every few years to see if symptoms have disappeared.

Table 1. Absolute risks attributable to HT per 10 000 women/year aged 50–59 years during study intervention period (I) and 13 years of cumulative follow up (CF).[7]

Outcome	E+P (I)	E (I)	E+P (CF)	E (CF)
Breast cancer	+6	-5	+9 (SS)	-7 (NSS)
CHD	+5	-11	+5 (NSS)	-11(SS)
Stroke	+5	-1		
Pulmonary embolus	+6	+3		
Hip fracture	-3	-3		
All-cause mortality			-5 (NSS)	-12(NSS)

SS – Statistically significant. NSS – Not statistically significant.

Vaginal symptoms can also appear relatively early in the menopausal transition and, unlike VMS that tend to improve over time, do not get better without ongoing treatment. Vaginal oestrogen will improve both vaginal symptoms along with other aspects of the genitourinary syndrome (vaginal irritation, urgency, urge incontinence and dysuria) and is likely to require at least six to eight weeks of use before benefit is seen. Oral oestrogen may improve vaginal symptoms, but makes incontinence worse.[8] Low-dose, local vaginal oestrogen should be continued as long as symptoms persist. There are no safety data extending beyond 12 months, but no time limits for therapy use have been established.[9]

The menopause transition usually does not require treatment. For those women with troublesome symptoms affecting quality of life, several options are available. Clinicians and women need to know about which symptoms are due to menopause, the available treatment options and their risks and benefits to enable shared decision-making. This is appropriate in general practice, but may require further referral when there are medical conditions or no improvement of symptoms. Treatment should be reviewed within three months for efficacy, then at least annually. Treatment can initially be stopped after a few years to see if symptoms have disappeared.

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Body-identical hormone therapy

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Some women passing through the menopause transition suffer severe sweats and flushes or other menopausal symptoms, and while menopausal hormone therapy (MHT) is by far the most effective treatment, many are fearful of using it. Every doctor who treats menopausal women knows that the 'big issue' around MHT usage is breast cancer risk. When the Women's Health Initiative (WHI) study dramatically released its initial results to the world media in 2002, this resulted in headlines here in Australia such as 'Stop your HRT and see your doctor' (*Daily Telegraph* lead page 10 July 2002). Many now incorrectly believe that all MHTs cause breast cancer.

For example, in WHI, there was a difference in breast cancer risk between the combined arm (eight extra breast cancers per 10 000 per year after five years)[1] and the oestrogen-only arm (significantly reduced risk of intraductal carcinoma compared with placebo).[2] A large randomised controlled trial (RCT) of tibolone also showed a significantly reduced risk of breast cancer, compared with placebo.[3]

Many women want to use 'natural hormones'. Compounded MHT, often called bio-identical hormone therapy (BHT) is currently being used by thousands of Australian women, despite the risks of using a treatment that has no formal quality control or safety studies. BHT has been reviewed by a number of scientific bodies and largely rejected on safety grounds.[4,5]

Body-identical hormone replacement therapy has been suggested by some in Europe.[6] This uses pharmaceuticals that contain real human hormones such as oestradiol (E2) and progesterone (P4), rather than conjugated equine oestrogens, tibolone or norethisterone (NE). In Australia, body-identical oestrogens have been available for many years. These include E2 patches, oral tablets or transdermal gel, as well as E2 pessaries and oestriol cream.

Until recently, synthetic progestins had to be used to protect the endometrium and studies such as WHI have confirmed that progestins seem to significantly contribute to the increased risk of breast cancer seen with combined MHT and likely negate some of the cardiovascular benefits of oestrogen.

Progesterone has been available in Australia as a pessary for some years (mostly for luteal phase support), but rarely used as part of MHT. Micronised progesterone (mP4) became available as a gel cap for oral use (Prometrium, Besins) from 1 September 2016. Micronised progesterone combined with E2 has been used in Europe for many years. This article will focus on the safety aspects of MHT containing mP4.

Oestradiol

E2 has long been available in Australia, and for many healthy women aged 60 years or younger, oral E2 is usually safe. Oral E2 is available as a single-agent tablet (for example, Progynova 1mg, 2mg) or in combination with synthetic progestins (for example, Femoston range).

For those over 60 years of age or at risk of thrombotic episodes (for example, history of DVT, thrombophilia), transdermal E2 should be considered (patches or gel) as first-line treatment. Oral E2 undergoes hepatic first-pass with activation of clotting factors in contrast to transdermal therapies, which do not.[7] Clinical trials also confirm that oral E2 oestrogens including E2 are linked to increasing risk with age of DVT, stroke and pulmonary embolism, unlike transdermal E2 that appears to have minimal or no effect on the risk of venous and arterial thrombosis.[7] Transdermal E2 is available as patches (for example, Estradot, Estraderm, Climara) or gel (Sandrena) or in a CombiPatch with NE as the progestin (Estalis range).

Vaginal oestrogens are best delivered into the anterior vaginal compartment, which has vascular and lymphatic connections with the vulva, clitoris and bladder.[8,9] As will be discussed later, the posterior vagina can be used as a delivery system for the uterus.

Dehydroepiandrosterone

Dehydroepiandrosterone (DHEA) is an adrenal prohormone having no biological activity of its own; however, in those tissues that have the suitable enzyme systems (for example, the vagina) DHEA can be converted into oestrogens and androgens. Reviews and RCTs have shown that oral DHEA appears to be devoid of any clinically relevant action.[10] In contrast, vaginal DHEA appears to oestrogenise the vagina without any systemic effect.[10]

Testosterone

Serum levels of both DHEA and testosterone fall with age. However, unlike DHEA, testosterone replacement may have a role when a woman presents with fatigue and loss of sex drive, in association with a low total- or free-testosterone level. Other causes, such as thyroid disease, iron deficiency and relationship issues, need to be excluded.

This topic has been reviewed elsewhere.[11] The only pharmaceutical grade testosterone product for women available in Australia is AndroFeme (Lawley Pharmaceuticals, WA). The starting dose is 0.5cc daily, rubbed into the skin of the thigh or buttock; with a therapeutic goal of a Free Androgen Index (FAI = T X 100 / SHBG) between 4–7 per cent. Typically, around two-thirds of women have an improvement in energy and sex drive over about six months.[11,12]

If E2 is given concomitantly, transdermal E2 is preferred. Oral E2 may increase serum levels of the hepatic derived, sex-hormone binding protein (SHBG) that will, in turn, reduce free testosterone levels.

Progesterone

Two micronised progesterone products were recently released in Australia – Prometrium 100mg and Utrogestan 200mg. These two products have identical specifications but different dosages; in clinical practice both products can be used orally or vaginally. Micronisation improves gut and vaginal absorption of the product. Oripro vaginal pessaries 100mg and 200mg and Crinone vaginal gel 8% (90mg) are also available in Australia.

Clinical trials have shown that the endometrial protective dose of oral mP4 is 200mg cyclical or 100mg daily, at least when used with E2 patches 25–50μg daily (or conjugated equine oestrogens [CEE] 0.625mg daily).[13,14,15] These studies also demonstrated that mP4 did not attenuate the cardiovascular benefits of oestrogens, unlike synthetic progestins. Oral mP4 is very well tolerated with few patients having side effects, although mild sedation can occur with commencement of therapy and, as such, should be taken at night.[16] A small minority may develop bloating or mood swings. As will be discussed shortly, these patients can switch to the vaginal route and avoid these side effects. In contrast, around 10 per cent of women using progestins develop side effects, such as bloating, mood swings and even depression.[16]

The vagina as a delivery system has been reviewed.[8,9] The posterior vagina has lymphatic and circulatory connections with the uterus and vaginal P4 is particularly well absorbed into the uterus. Clinical trials have shown that if low doses of E2 are given transdermally (for example, 25μg E2 patch or a sachet of Sandrena gel daily) then doses of vaginal progesterone as low as 100mg two to three times a week in divided doses are effective for endometrial protection. Stute and colleagues have recently reviewed this subject.[15]

Breast effects of MHT containing mP4

The E3N-EPIC Study is a large prospective cohort study investigating women born between 1925 and 1950 (n=98 997).[17] Breast cancer risk factors were reviewed in 54 548 postmenopausal women who had never used HRT before entering into the trial. Over the study period of six years, 958 primary breast cancers were detected. Those who used HRT took it for an average of 2.8 years. Those using E2 alone (hysterectomised patients) and those using E2 and mP4 did not have an increased risk of breast cancer, in contrast to those using oestrogen and synthetic progestins, who had a significantly increased risk of developing the disease (RR 1.4 [95% CI 1.2–1.7]).

A recent systematic review examining the breast cancer risk associated with progestins and mP4[18] has confirmed these results. MHT regimens using mP4 were associated with a significantly lower risk of breast cancer than those using MHT therapies that included a synthetic progestin (RR 0.67; 95% CI 0.55–0.81). These clinical trial results are consistent with laboratory data, suggesting that progestins have adverse effects on breast cells in culture and in animal models, unlike P4 which seems to be neutral in terms of breast cancer promotion in the lab.[19]

Discussion

Body-identical MHT is preferred by many women, as shown by the number of Australian women using compounded, untested 'bio-identical HT'. With the arrival of oral mP4 to Australian shores, these women and their doctors finally have access to a tested, pharmaceutical-grade MHT.

However, there is still a role for other therapies. The Mirena device can very effectively control the heavy frequent periods associated with the perimenopause and can be combined with oral or transdermal E2. Cyclical MHTs, or even low-dose contraceptive pills, can be very helpful for some women to help them transit their perimenopause. For many postmenopausal women, whose only problem is vulvovaginal dryness, topical oestrogens are very effective and safe.

After several decades of research, it is clear that the diverse MHTs have different risk to benefit ratios. For those who have had a hysterectomy, unopposed transdermal E2 appears particularly safe. For women with an intact uterus, body-identical MHT containing mP4 appears to be a safe, tested and effective treatment.

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The elusive fountain of youth

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'We are all going to age and soften and mellow and transition. All of us. If we are lucky. There are plenty of things to be anti about: anti-discrimination, anti-drug, anti-oppression, anti-poverty and anti-sickness. Age isn't one of them. We need to become pro-aging and embrace the opportunities that aging provides.'

- Jamie Lee Curtis (actress)

Oestrogen should be the fountain of youth. It engulfs us as a powerful waterfall when we develop through our teens. We ride its temperamental waves through our 20s and sail its tranquil seas in our 30s. In our 40s, we hit the rapids trying desperately to stay afloat until the fountain suddenly dries up to a pitiful puddle barely able to quench our thirst. As Phyllis Diller so aptly put it: 'Maybe it's true that life begins at fifty… but everything else starts to wear out, fall out or spread out.'

The lack of oestrogenic support beyond the menopause produces a number of troublesome symptoms involving the vulva, vagina and bladder. The International Society for the Study of Women's Sexual Health (ISSWSH) and the North American Menopause Society (NAMS) Boards formally approved the term genitourinary syndrome of menopause (GSM) as a replacement for the older term vulvovaginal atrophy (VVA) in 2014.[1]

Anatomy and biochemistry

Embryologically, the uterus, cervix and upper third of the vagina develop from the mesoderm. The endoderm gives rise to the urogenital sinus, forming the lower two-thirds of the vagina and urethra as well as the bladder trigone. The remainder of the urinary bladder develops from the distal ends of the Wolffian ducts.[2] A higher concentration of oestrogen receptors (ER) is present in tissues arising from the endoderm rather than the mesoderm, making these structures far more sensitive to the hormone. ERα are localised in the urethral sphincter, while the urinary bladder is populated by ERβ. Both receptors are present in the premenopausal vaginal epithelium; the postmenopausal vaginal epithelium lacks ERβ.[3]

Oestrogen increases glycogen storage in the vaginal epithelial cells, providing a substrate for lactic acid production, which subsequently promotes the growth of lactobacilli. The interplay between hormone and bacteria ensures an acidic vaginal pH of 3.5 to 4.5, providing a natural protection against vaginitis and urinary tract infections (UTIs). Oestrogen increases blood flow in the vaginal walls during sexual arousal, resulting in congestion and lubrication. It also controls collagen synthesis and breakdown within the vaginal walls.[4]

Oestrogenic effects on the urethra include an increase in the muscular tone of the urethral sphincter and an increase in the peri-urethral resistance. Oestrogen maintains the sensory threshold of the bladder and promotes relaxation of the detrusor muscle during the filling phase.[3]

Symptoms and signs of GSM

GSM typically develops five to six years after the menopause and affects at least 50 per cent of postmenopausal women. Symptoms are under-reported and therefore the true incidence of GSM is under-appreciated.[5]

The lack of oestrogen in the vaginal mucosa causes a reduction in collagen formation and regeneration. Blood flow is reduced and a shift in the vaginal maturation index occurs. This leads to a decrease in glycogen-rich epithelial cells, loss of lactobacilli and a subsequent rise in vaginal pH to between 6 and 7. Symptoms may include dryness; itching; vaginal discharge; decreased elasticity; abnormal vaginal bleeding; loss of rugae; thinning of the vaginal walls; petechiae and ulcerations.[5,6]

The labia and vulva lose their fullness; the introitus narrows; mucosal surfaces are inflamed and phimosis of the clitoris occurs. It is essential to differentiate these external characteristics from other vulval dermatoses such as lichen sclerosus, lichen planus and lichen simplex chronicus. These should be treated in the first instance, prior to commencing topical therapies for GSM.[5]

The lack of oestrogen in the postmenopausal bladder decreases detrusor contractility, with a higher rate of voiding dysfunction and an increase in residual urine volumes. This can lead to symptoms of an overactive bladder, including frequency, urgency and nocturia. Furthermore, the mechanical clearance of pathogens from the bladder and urethra is compromised and, together with the rise in vaginal pH, it leads to an increased risk of UTIs in the postmenopausal woman.[3]

Sexual activity often declines with age, due to male or female factors, or both. A US study found that sexual dysfunction occurs four times more commonly in women who suffer from GSM compared

to those who don't. The CLOSER study, a large international survey, showed that up to 27 per cent of women are concerned about vaginal discomfort ruining their future sex lives. Menopause-associated psychosexual complaints may include decreased sexual desire/arousal/orgasm/frequency of intercourse; dyspareunia; post-coital bleeding; lower self-esteem; negative impact on relationships and an increased risk of sexually transmitted infections due to the friable, atrophic mucosa. These concerns should be addressed in a timely fashion when they arise, to prevent decreased sexual function from becoming sexual dysfunction.[5,6]

It is essential to recognise that GSM is a diagnosis of exclusion. 'Red flag' symptoms, such as vaginal bleeding or discharge, should be investigated appropriately to rule out more sinister conditions.

Management of GSM

Topical oestrogens form the mainstay of treatment for GSM. Types of oestrogen preparations differ widely, including creams, pessaries and rings. When assessed at a minimum of 12 weeks, topical oestrogens compared to placebo showed fewer symptoms of vaginal atrophy, an increase in vaginal maturation index and lower pH values. These results were consistent across all types of oestrogen preparations. Adverse events occurred at similar rates, but were rare in both oestrogen replacement and placebo groups. Topical oestrogen replacement is more likely to improve symptoms of urinary incontinence as compared to systemic menopausal hormone therapy (MHT). Systemic MHT is not advocated primarily for the treatment of GSM but may offer relief of symptoms even when taken for indications such as vasomotor symptoms.[7,8]

Adverse effects of topical oestrogen

Systemic absorption of vaginal oestrogen remains a major concern for healthcare professionals and patients alike. During the loading period (treatment nightly for two weeks) there is an increase in measured serum oestrogen levels. These levels decrease to the usual postmenopausal levels (less than 20pg/mL) once the maintenance dose is commenced, largely due to thickening of the vaginal mucosa that results in lower transvaginal absorption. Progesterone supplementation is not recommended for endometrial protection with the use of vaginal oestrogen preparations.[7,8]

Non-hormonal management options

Gels may lower the pH of the vagina and show a greater reduction in dyspareunia when compared to placebo. They may reduce the incidence of bacterial infections and bacterial vaginosis. Many different preparations are available for over-the-counter purchase.[6]

Water/oil/silicone-based lubricants can be used intermittently during sexual intercourse to moisten the vagina and reduce dyspareunia. They do not treat the underlying cause of symptoms and may cause irritation in some women. They may increase the incidence of thrush.[6]

Vaginal moisturisers are recommended for continuous rather than periodic use. Replens is a vaginal moisturiser that has been compared to vaginal oestrogens.[9] They have similar efficacies in reducing symptoms of itching, irritation and dyspareunia, but objectively, Replens® does not alter the vaginal maturation index and has no effect on associated bladder symptoms.

The future

Newer medications for GSM include selective oestrogen receptor modulators (SERMs) such as ospemifene. Ospemifene has shown efficacy, however carries an increased risk of VTE, similar to other SERMs. Vaginal dehydroepiandrosterone (DHEA) improves vaginal dryness, dyspareunia and irritation/itching; seemingly without a stimulatory effect on the endometrium. Tibolone is a synthetic steroid with oestrogenic and androgenic properties. It improves sexual function, vaginal maturation index and blood flow. Tibolone may also improve symptoms of nocturia and urinary urgency. Topical testosterone offers significant relief of dyspareunia and dryness in a small group of women on aromatase inhibitors for treatment of breast cancer.[5,6]

Vaginal laser treatment is becoming increasingly popular as a treatment option of GSM. A small, prospective pilot study compared 45 women undergoing laser treatment to a group of 19 women who had conventional oestrogen replacement therapy. Outcomes between the two groups were comparable at intervals measured during treatment.[10] The oestrogen group showed a reduction in efficacy at six months (treatment lasted for three months only) as expected when the treatment is discontinued. The literature on this subject is growing, but caution should be exercised as we await large prospective, comparative studies and long-term follow-up data.

Conclusion

The increase in life expectancy in the western world means that women spend a third of their lives in the hypo-oestrogenic period beyond the menopause.[3] In the 21st century, GSM will inevitably become an increasing concern to women and their partners. Although often considered minor or unimportant, GSM is the cause of much distress and misery, with markedly adverse effects on a woman's quality of life. It deserves serious attention from health professionals and researchers alike.

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Osteoporosis in postmenopausal women

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Bone loss is an inevitable consequence of living past middle age and, in women, is substantially dependent on the lower circulating oestrogen level postmenopause; postmenopausal bone loss can be deferred indefinitely by the use of oestrogen replacement. Low oestrogen levels lead to increases in osteoclast numbers and activity, resulting in a sustained excess of bone resorption over bone formation. The consequent fall in bone mass is mirrored by a progressive rise in fracture risk, resulting in more than 50 per cent of postmenopausal women having a fracture of some sort between menopause and death. Forearm and hip fractures occur in about 20 per cent of older women and vertebral deformities progressively increase with age, affecting more than two-thirds of women in their 80s. Individuals of Polynesian or African descent have higher bone density and lower fracture risk than those of European or Asian ancestry. Since not all postmenopausal women fracture, the first task in osteoporosis management is to assess fracture risk so that interventions can be targeted to those most likely to benefit.

Risk assessment

The last three decades have seen an evolution in our operational definition of osteoporosis. Prior to the advent of bone densitometry, osteoporosis was defined as the occurrence of fractures after minimal trauma. In the 1990s, it was redefined in terms of bone density (a value more than 2.5 standard deviations below the young normal mean). More recent epidemiology studies have indicated that, while bone density is an important risk factor, clinical risk factors (such as age, weight, personal and family history of fractures, smoking, glucocorticoid use, falls) are also important. This has resulted in the development of fracture risk calculators that facilitate the integration of all risk factors to produce a global assessment of risk. FRAX is probably the most widely used calculator, but the Garvan calculator appears to be better calibrated for Australasian populations and has the important advantage of incorporating recent falls history as a risk factor. In patients with borderline fracture risk, using both calculators can optimise fracture prediction.

Cost-effectiveness analyses have suggested that a 10-year risk of hip fracture of about 3 per cent, or of major osteoporotic fracture of 15–20 per cent, are appropriate thresholds for intervention. This is dependent on the cost of interventions – a lower threshold is cost-effective when using generic medications, but a much higher threshold should apply to expensive interventions such as teriparatide. Hip fracture risk in women doubles every six years, which guides intervals between assessments in women not taking anti-osteoporotic medication.

Non-pharmacological interventions

Some interventions can be advocated across the population because of their low cost and their contribution to both skeletal and non-skeletal health. These interventions include underweight avoidance (hip fracture risk increases steeply when BMI is less than 20), not smoking, moderating alcohol intake and remaining physically active. In the frail elderly, falls prevention is particularly important and may entail removal of fall hazards, optimisation of vision correction, minimisation of sedative use and appropriately designed exercise programs. Hip protectors may have some value in frequent fallers, but the evidence is mixed.

Pharmacological interventions

Pharmacological interventions that have been demonstrated to be safe and effective should be targeted to individuals according to their fracture risk. Figure 1 provides an overview of the anti-fracture efficacy of available therapies.

Calcium supplements

There is scant evidence that calcium intake influences fracture risk,[1] and it is not included in any of the major fracture risk calculators. Supplements modestly reduce bone turnover, resulting in a non-cumulative bone density benefit of about 1 per cent.[2] In the major community-based studies published in the last decade, this has not translated into a fracture reduction, and there is even some suggestion that calcium may increase hip fracture risk. In contrast, the use of calcium plus vitamin D in frail elderly women with severe vitamin D deficiency has been shown to reduce fracture risk, probably representing the efficacy of treating subclinical osteomalacia. Possibly, a similar effect could be achieved with a balanced diet and vitamin D supplementation, but this has not been formally assessed. Calcium supplements commonly cause gastrointestinal side effects, increase the risk of kidney stones and may increase cardiovascular risk, though this remains subject to controversy. In the absence of evidence of fracture prevention, there seems to be little indication for their general use in the postmenopausal population.

Vitamin D

Vitamin D is a substrate, manufactured in the skin with ultraviolet light exposure, for an endocrine system that regulates

intestinal calcium absorption. Tissue-specific knockout studies of the vitamin D receptor (VDR) indicate that it has no clinically significant direct effects on bone and that the presence of VDR in the gut is both necessary and adequate for normal skeletal mineralisation. Indeed, high levels of vitamin D metabolites can increase bone resorption, some studies demonstrating increases in the risks of fractures and falls with high vitamin D doses.[3]

Severe vitamin D deficiency (less than 20nmol/L) results in osteomalacia. Therefore, in those not receiving regular sunlight exposure (for example, frail elderly, veiled women, or those with dark skin living at high latitudes), supplementation with 400IU/day is a sensible measure for osteomalacia prevention. Vitamin D supplements in populations with levels greater than 40nmol/L have not been shown to increase bone density or reduce fracture risk.[4] Vitamin D is not a tonic for bone, but it is critical for normal bone mineralisation and osteomalacia prevention.

Bisphosphonates

Bisphosphonates are the most widely used agents for osteoporosis management. They bind avidly to bone surfaces where they potently inhibit the activity of bone-resorbing osteoclasts. Whether administered orally or intravenously, their efficacy is comparable, reducing vertebral fractures by 50–70 per cent, hip fractures by about 40 per cent and total fracture numbers by one-quarter. Their long residence time in bone permits intermittent administration. Tablets are typically given weekly and may cause gastrointestinal intolerance in 20–30 per cent of individuals. Intravenous amino-bisphosphonates can be given as infrequently as every one to two years. On first administration of intravenous bisphosphonates, about 30 per cent of people develop a flu-like illness, typically mild and lasting only a day or two. Intravenous bisphosphonates are contraindicated in patients with renal failure (GFR less than 35ml/min), and these drugs can precipitate symptomatic hypocalcaemia if given to patients with severe vitamin D deficiency.

There are two other safety concerns often raised with bisphosphonate use. Intravenous bisphosphonates, when dosed monthly in patients with metastatic cancer, sometimes impair healing of tooth extraction sites, resulting in necrotic infected lesions referred to as osteonecrosis of the jaw (ONJ). While clearly a problem in cancer patients, there is little evidence that the frequency of this problem is increased in osteoporosis patients receiving bisphosphonates, when compared with osteoporosis patients not receiving bisphosphonates. The adverse event of greater concern is the occurrence of atypical femoral fractures. These lesions develop initially as stress fractures in the lateral cortex of the femoral shaft, which sometimes progress to full transverse fractures. They are not unique to bisphosphonate users but appear to increase in frequency with duration of use of oral bisphosphonates, particularly alendronate. Their frequency appears to reduce rapidly following discontinuation of bisphosphonates.[5] For this reason, drug holidays of 6–24 months are frequently instituted in patients whose underlying fracture risk requires treatment for more than five years with these agents. Most studies indicate that if bisphosphonates are targeted to those with elevated fracture risk, the number of fractures prevented will almost always greatly outweigh the small absolute risk of atypical femoral fractures.[6]

Oestrogens and selective oestrogen receptor modulators

Oestrogen prevents postmenopausal bone loss and fractures, and its introduction late in postmenopausal life results in a 24 per cent decrease in total fracture numbers.[7] Its non-skeletal effects (cardiovascular, breast) have greatly reduced its use outside the decade immediately after menopause. Some selective oestrogen receptor modulators (SERMs) are, like oestrogen, inhibitors of bone resorption, and have been shown to reduce vertebral fracture risk, but not the risk of non-vertebral fractures and hip fractures. This limitation greatly reduces their utility in osteoporosis management.

Denosumab

Denosumab is a monoclonal antibody targeted at the principal regulator of

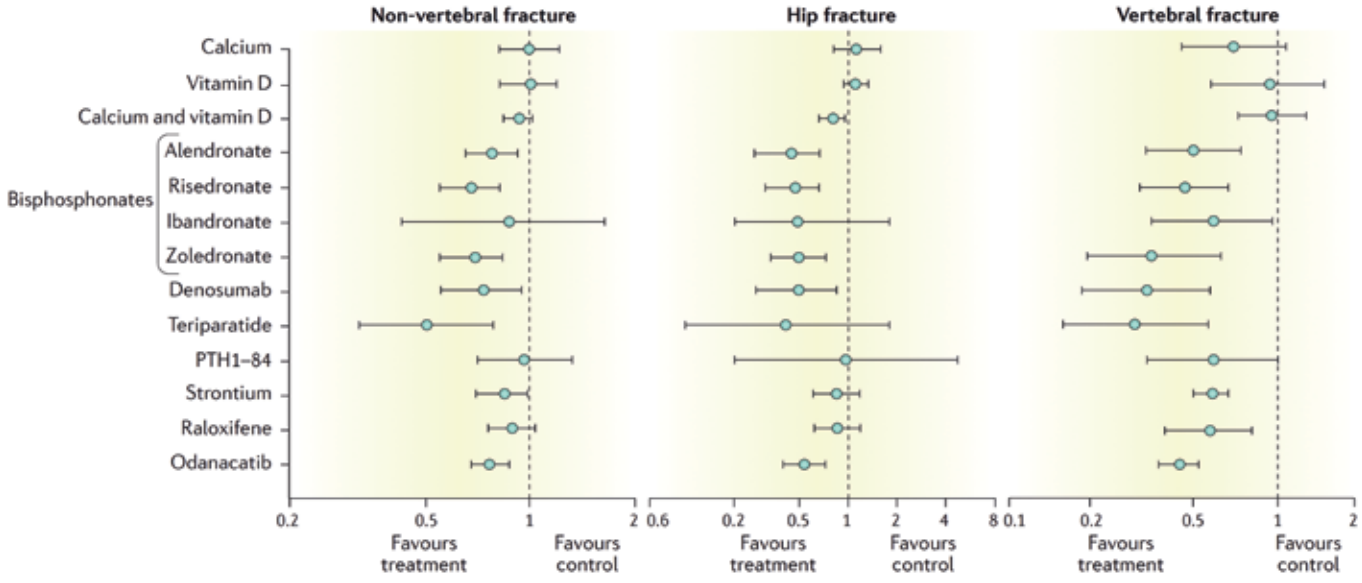

Figure 1. Summary of trial data documenting the efficacy of treatments for the prevention of fractures. Data for strontium, odanacatib and parathyroid hormone (PTH) 1–84 are relative risks, other data are odds ratios. Results are shown with 95 per cent confidence intervals. From Eastell et al,[8] used with permission.

Summary
Progressive increases in life expectancy have resulted in a steady climb in low trauma fractures among the elderly. Fracture risk can be estimated from clinical risk factors and bone density, and a formal assessment is indicated in most women in their early 60s, earlier in those with specific risk factors. A 10-year hip fracture risk of more than 3 per cent is an arbitrary, but widely used, threshold for pharmaceutical intervention. Bisphosphonates remain the most widely used pharmaceuticals, with denosumab, teriparatide and agents acting on the oestrogen receptor also having roles. Calcium requirements can usually be met from a balanced diet, but low-dose vitamin D replacement is important for osteomalacia prevention in those with inadequate sunlight exposure (for example, the frail elderly). Maintaining BMI higher than 20 is an important community-wide measure for fracture prevention, along with smoking cessation and regular safe exercise.

osteoclastogenesis. It is administered as six-monthly subcutaneous injections. It profoundly inhibits bone resorption and produces anti-fracture effects comparable to those of intravenous zoledronate. The incidences of ONJ and of atypical femoral fractures with denosumab appear to be comparable to those with bisphosphonates. In contrast to the bisphosphonates, cessation of denosumab results in a rapid increase in bone resorption, resulting in bone loss and increased fracture risk in the first six months after a denosumab injection is missed. Therefore, it is probably preferable to transition denosumab-treated patients on to a bisphosphonate, if denosumab needs to be discontinued.

Anabolic agents

Teriparatide is a fragment of parathyroid hormone and stimulates both bone formation and bone resorption, the former predominating when it is given as daily injections. Its anti-fracture efficacy is broadly comparable to that of the potent bisphosphonates. Newer, related analogues, such as abaloparatide, are currently in clinical development. A new family of anabolic treatments that act by blocking the inhibitory actions on osteoblasts of the osteocyte protein, sclerostin, is under development, of which romosozumab is the furthest advanced.

Conclusions

With the ageing of our population, the number of older postmenopausal women has substantially increased and so have fracture numbers. Therefore, fracture risk assessment in the 60s is now a routine part of the care of postmenopausal women, with the provision of lifestyle advice (weight maintenance, smoking cessation, regular safe exercise) to all, and the targeting of pharmaceuticals to those at higher risk. Maintenance of serum 25-hydroxyvitamin D greater than 40nmol/L is important for osteomalacia prevention so vitamin D supplements have an important role in the frail elderly.

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Medical management of the menopause

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Hormone replacement therapy (HRT) was first introduced in the 1940s. Use became widespread in the 1960s, fostered by the erroneous concept that the menopause was a hormone deficiency disorder and that replacement would make women 'feminine forever'.

Popularity increased in 1988, after the US Food and Drug Administration (FDA) approved HRT for the treatment of osteoporosis. Increasing use was accompanied by a number of observational cohort studies and by the 1990s these studies had consistently shown that HRT reduced the incidence not only of osteoporosis but also cardiovascular disease (CVD). All-cause mortality was also reduced. There was little doubt about the benefits of HRT and hormonal management of the menopause became accepted practice.

There were reports of an increased risk of breast cancer with long-term use, but these were of borderline significance. Similarly, risk of stroke was increased in some, but not all, studies. As the incidence of stroke and breast cancer were quite small compared to cardiovascular disease, it was felt that the reduction in CVD risk was the major contributor to the 20–40 per cent reduction in all-cause mortality seen across observational studies. Oestrogen was said to be cardio protective, although its benefits were somewhat attenuated by the addition of synthetic progestins. The FDA held an enquiry to decide whether or not to approve oestrogen for cardio protection, but decided randomised controlled trial (RCT) data were required. The scene was set for the Women's Health Initiative (WHI).

Details of the WHI trial are well known. After just over five years, the oestrogen and progestin (E&P) arm was stopped due to evidence of harm. The main message was increased risk of breast cancer and cardiovascular disease, that HRT did more harm than good and that the effects were seen in all women of all ethnicities and all ages. Mayhem ensued. Two years later came the results from the conjugated equine oestrogens (CEE)-only arm of the trial. Neither breast cancer nor heart disease was increased, but there was an increased risk of ischaemic stroke. In 2006, data from the CEE-only arm was released in age cohorts. These showed cardiovascular benefit for women in their 50s. Results were neutral for women in their 60s and harm occurred with initiation in the 70s. Long-term follow up showed a reduction in breast cancer risk for oestrogen-only users. Pooled data from the two arms of the trial also showed that for women aged 50–59 all-cause mortality was reduced by 30 per cent, similar to that seen in observational studies. When long-term follow-up data were released in 2013, there was no increased risk of CVD in any age group, but the benefit appeared greater in the CEE-only arm. It was apparent that the harms suggested at the initial WHI press release had been exaggerated. We had come full circle.

Meanwhile, observational studies in France and the UK were reporting different results for combined HRT using different progestogens. Whereas medroxyprogesterone acetate (MPA) attenuated the cardiovascular benefits of oestrogen, the same was not true for combinations of oestrogen with micronised progesterone or dydrogesterone. These two progestogens also appeared safer for the breast than synthetic progestins.

Into the 21st century

HRT is now commonly called menopause hormone therapy (MHT); the inference being that it should be used to treat a complaint rather than merely to replace a hormone.

Key points

- MHT is the most effective treatment for menopausal vasomotor symptoms and is safest in recently menopausal women.
- Appropriate screening should occur prior to initiating MHT.
- The lowest effective dose consistent with treatment goals should be used.
- Oestrogen-only therapy is appropriate in women following hysterectomy.
- In perimenopausal women with a uterus, sequential combined therapy of oestrogen plus a progestogen for 12–14 days per month is preferred.
- In postmenopausal women with a uterus, therapy may be sequential or continuous oestrogen plus continuous progestogen.
- Transdermal therapy may reduce VTE risk compared to oral therapy.
- Different progestogens may exert different effects on breast and cardiovascular health.
- There is no mandatory cessation time.
- There is lack of evidence to support the use of MHT in breast cancer survivors.
- Avoid compounded non-TGA-approved preparations.

Using MHT

- In women aged <60 years or within 10 years of their last menstrual period (LMP) and without contraindications, MHT is a safe, therapeutic option for treatment of VMS with ancillary bone and cardiovascular benefits.
- Contraindications to MHT use include undiagnosed vaginal bleeding, oestrogen-dependent cancer, severe active liver disease, high risk of VTE or breast cancer, untreated hypertension and personal choice.
- MHT should not be recommended without a clear indication for its use.
- The option to use MHT is an individual decision and should be considered in terms of quality of life, health priorities and personal risk factors such as age, time since LMP and the risk of VTE, stroke, ischaemic heart disease and breast cancer.
- Consideration of MHT for symptom relief or osteoporosis prevention should be part of an overall strategy including recommendations regarding diet, exercise, smoking cessation, safe levels of alcohol consumption and weight control.
- The type and route of administration of MHT should be consistent with treatment goals and patient preference. The minimum effective dose should be used and treatment should be individualised and reviewed at least annually.
- Duration of treatment should be consistent with treatment goals and there is no mandatory cessation time.
- Oestrogen-only therapy is appropriate for women after a hysterectomy, but a progestogen is required in the presence of a uterus with the exception that CE may be combined with bazedoxifene in a fixed-dose regimen.
- For women with a uterus and within 12 months of their LMP a combination of continuous oestrogen plus a progestogen for 12–14 days per month is usually preferred.
- Benefit-to-risk ratio appears to be greatest when a transdermal oestrogen is combined with micronised progesterone or dydrogesterone, but this may not suit all women and treatment must be individualised.
- For women with a uterus that are more than 12 months from their LMP, the above sequential regimens may be continued or converted to continuous combined oestrogen plus progestogen therapy.
- The use of testosterone therapy, alone or with MHT, is supported in carefully selected postmenopausal women with sexual interest or arousal disorders.
- The use of custom compounded MHT is not recommended because of lack of regulation, safety and efficacy testing, batch standardisation and purity measures.
- Current safety data do not support the use of MHT in breast cancer survivors.
- In certain women for whom non-hormonal and complementary measures have been unsuccessful in alleviating severe symptoms, discussion regarding hormonal options may be appropriate and should involve the woman, her oncologist, breast surgeon and GP together with treating doctor.
- In women with premature ovarian insufficiency and without contraindications, MHT should be continued at least until the average age of the menopause.

Recently, new guidelines or recommendations on the use of MHT have been published by the National Institute for Health and Care Excellence (NICE) in the UK, the US Endocrine Society and the International Menopause Society. All three are in broad agreement regarding the real risks and benefits of MHT and support its use in appropriate, recently postmenopausal women. A Revised Global Consensus Statement on MHT use has also been published, which summarises the key points around MHT use.

Indications

MHT, including tibolone and the combination of conjugated oestrogens and bazedoxifene (CE/BZE), is the most effective treatment for vasomotor symptoms (VMS) associated with menopause at any age, but benefits are more likely to outweigh risks when initiated before the age of 60, or within 10 years of the last period.

If MHT is contraindicated, or not desired for the treatment of bothersome VMS, selective serotonin reuptake inhibitors (SSRI) and serotonin and noradrenalin reuptake inhibitors (SNRI), such as paroxetine, escitalopram, venlafaxine and desvenlafaxine, have been shown to be effective in RCTs. Gabapentin may also be considered. Quality of life, joint and muscle pain, mood changes and sleep disturbances may also improve during MHT treatment. MHT is effective in the treatment of vulvovaginal atrophy. Local low-dose therapy is preferred for women whose symptoms are confined to the lower genital tract. In these women, there is no need for added progestogen.

Other benefits

MHT, including tibolone and CE/BZE, is effective in preventing bone loss in postmenopausal women and significantly reducing osteoporotic fractures at hip, vertebral and other sites.

MHT may be initiated in postmenopausal women at risk of osteoporosis or fracture before age 60 or within 10 years of last menstrual period (LMP). Initiation after age 60 requires individually calculated benefit-to-risk ratio, compared with other approved drugs.

RCTs, observational data and meta-analysis provide evidence that oestrogen-only MHT may decrease the risk of myocardial infarction and all-cause mortality when initiated in women younger than age 60 or within 10 years of LMP.

Data for E&P MHT shows a similar trend, but is less robust. Observational studies suggest some synthetic progestins, but not micronised progesterone, may attenuate the cardiovascular benefits of oestrogen.

MHT initiated in early menopause has no substantial effect on cognition but, based on observational studies, may prevent Alzheimer's disease in later life.

MHT may be beneficial in improving mood in perimenopausal and recently menopausal women, but antidepressant therapy remains first-line therapy for major depressive illness.

Adverse effects

Short-term side effects of oestrogen therapy are usually dose related and include bloating, fluid retention, breast tenderness and headache.

Oral MHT is associated with an increased risk of venous thromboembolism (VTE). This effect is highest in the first year of treatment and is dose related. Observational studies and a meta-analysis point to a lower risk of VTE, and possibly stroke, with transdermal therapy compared to oral therapy.

The risk of breast cancer in women over 50 years of age associated with MHT is complex. Decreased risk has been reported for oestrogen-only therapy in women who have had a hysterectomy both in RCTs (WHI) and observational studies. Conversely, RCT evidence (WHI) suggested a possible increased risk of breast cancer for women receiving oestrogen when combined with a progestogen. The increased risk seems to be primarily, but not exclusively, associated with the use of a progestin with oestrogen therapy and may be related to duration of use. The risk may vary with different progestins. The risk of breast cancer attributable to MHT is rare and equates to an incidence of less than one per 1000 women per year of use and appears to decrease after treatment is stopped. This level of risk is similar to other common risk factors, including sedentary lifestyle, obesity, alcohol consumption, nulliparity, not breast feeding, early menarche and late menopause.

In RCTs, oral MHT administered to women aged 65 years or older may increase the risk of dementia and has no positive effect on cognition.

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Changes in sexual function: hormonal treatment

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Disorders of female sexual function are complex, clearly multifactorial in nature and often require multidisciplinary input. While psycho-social factors, such as relationship factors and mood, are very important and often play the dominant role, hormones are important contributors as well. This article provides a summary of some of the hormonal aspects of female sexual function at menopause. Although not covered here, when considering the role of hormones in a woman presenting with sexual problems, assessing the whole woman is very important. As well as a comprehensive social history, a thorough medical history is required to screen for other contributors to sexual problems, such as psychotropic medications.

The Study of Women's Health Across the Nation (SWAN) was a longitudinal study of more than 3000 multiethnic American women followed through the menopause transition. SWAN found that the major changes in sexual functioning that occurred with menopause were:

1. an increase in vaginal and pelvic pain with sexual intercourse
2. a decrease in sexual desire

However, there was no significant difference in arousal, emotional satisfaction or physical pleasure.

SWAN, and other studies, demonstrate that problems with sexual function are very common at midlife, with low sexual desire being the most common complaint. Most research into the hormonal aspects of female sexual dysfunction have focused on hypoactive sexual desire disorder (HSDD). HSDD can be diagnosed when low sexual desire that causes personal distress is present and other causes have been excluded.

Testosterone

Testosterone is the hormone most researched in terms of sexual desire. In women, testosterone is made by the ovaries and by peripheral conversion of androgens made in the adrenal glands. While it is thought of as a male hormone, women in fact have more testosterone than oestradiol. Around two-thirds of serum testosterone is bound to sex hormone binding globulin (SHBG), one-third to albumin and 1 per cent is unbound. It is the unbound, or free portion, that exerts peripheral effects. Testosterone levels decline with age such that a woman in her 40s will have about half the level of a woman in her 20s. Menopause per se does not appear to dramatically alter testosterone levels, with the postmenopausal ovary still able to produce some testosterone. Women with surgical menopause, however, do experience a sudden reduction in testosterone levels of about 50 per cent. Likewise, women with adrenal insufficiency or primary ovarian insufficiency may also have lower testosterone levels.

There is an association between sexual desire and testosterone levels in some, but not all, epidemiological studies. There is, however, no testosterone level below which desire is always abnormally low or absent. Testoterone levels, therefore, are not useful in the diagnosis of HSDD.

There are several clinical studies of exogenous transdermal testosterone (TT) therapy for HSDD. The aim of TT therapy is to achieve serum testosterone levels in the normal range for a woman in her 20s.

The largest randomised controlled trial (RCT) included 814 naturally and surgically postmenopausal women randomised to TT-patch or placebo for 12 months. The TT group had an increase of one sexually satisfying event per month more than placebo. A recent meta-analysis of more than 5000 women supported this finding.

Small studies have also demonstrated efficacy in women with low desire due to selective serotonin reuptake inhibitors (SSRIs) and premenopausal women aged 35–45 with HSDD.

Transdermal testosterone therapy

In very high doses TT can cause acne, hirsutism, voice deepening, androgenic alopecia and cliteromegaly. With the low dose used to improve sexual desire, the most commonly reported side effect is hair growth, which may be at the site of application or in areas typically prone to androgenic hirsutism, such as the lip and chin. RCTs have demonstrated the short-term safety of testosterone, with data up to three years of use. TT (unlike older oral formulations) does not appear to affect lipids, glucose, breast density or cause endometrial thickening. Long-term safety, however, is limited to observational data, but there does not appear to be an increased risk of breast cancer associated with TT use.

How to use TT therapy

Who to consider it for: naturally or surgically menopausal women who report low sexual desire that causes personal distress; women who have decreased libido after starting an SSRI; older premenopausal women.

Who not to use it for: women with hirsutism, acne, androgenic alopecia; pregnant and breastfeeding women; women with a history of hormone dependent cancer due to unknown safety; premenopausal women who

are not using fail-safe contraception due to the harmful effects on a developing fetus.

What to test: check testosterone and SHBG levels. This is not for diagnostic purposes, but to exclude high testosterone levels or low SHBG levels, either of which is likely to result in androgenic side effects if TT therapy is used. If serum testosterone is within the normal range or lower than TT, therapy can be used.

What to prescribe: TT therapy does not have Australia-wide approval for use in women. One prescription formulation is approved in Western Australia with RCT data in women (Androfeme, Testosterone 1 per cent cream, Lawley Pharmaceuticals) and can be ordered by mail. Off-label use of male formulations can be problematic, resulting in excessive dosing. Excessive dosing not only causes side effects, but also at higher doses, TT may lose its efficacy in improving sexual desire. The Endocrine Society of Australia and the Australasian Menopause Society do not recommend use of compounded hormones due to concerns regarding the risk of contamination and variability in dosing.

The dosage: the standard dose is 0.5ml of 1 per cent testosterone cream applied once daily to the thigh. Care must be taken to carefully wash hands after application to prevent unintentional dosing of others.

Monitoring: serum testosterone levels should be repeated after at least three weeks of use. If testosterone levels are above the normal range, a dose reduction may be needed. Once serum testosterone levels are established at the mid-high end of the normal range, levels should be checked at six and 12 months and then annually.
What to expect: for women in whom TT therapy is effective, it usually results in a subtle increase in desire. It usually takes several weeks for the effect to become apparent. In RCTs, TT therapy results in an increase of one sexually satisfying sexual event per month as compared to placebo. A significant number of women will be non-responders. If no effect is seen after six months of use, treatment should be ceased.

Oestrogens

The decline in oestradiol seen at menopause is responsible for vasomotor symptoms (VMS) and symptoms of vulvovaginal atrophy (VVA)/genitourinary syndrome of menopause. Sexual pain caused by VVA may lead to impairments of other aspects of sexual function, such as desire and arousal. Vaginal oestrogen therapy is highly effective in improving symptoms of VVA and improving sexual function.

There is no high-quality evidence that systemic oestrogen therapy improves sexual function over and above its effect on vaginal health and VMS. It is therefore not recommended that systemic oestrogen therapy be used for the treatment of low libido or impaired sexual function in the absence of other menopausal symptoms.

In summary, female sexual function during menopause is a complex topic. Transdermal testosterone therapy can improve libido in postmenopausal women. Vaginal oestrogen therapy is highly effective for the impairments to sexual function caused by VVA.

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Premature ovarian insufficiency

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Premature ovarian insufficiency (POI) is defined as the loss of normal ovarian function before the age of 40 years. Terms used synonymously for POI include premature menopause, early menopause and premature ovarian failure. POI is now preferred, as these other terms imply a complete loss of ovarian function, and women with POI may intermittently produce oestrogen and ovulate, 50 per cent may experience intermittent menses and 5–10 per cent appear to achieve spontaneous pregnancy.[1] POI occurs in approximately 1 per cent of women[2] and is characterised by menstrual disturbance (either oligomenorrhoea or amenorrhoea), raised gonadotropin levels and oestrogen deficiency (biochemical and/or clinical symptoms).

Aetiology

Most commonly, POI occurs as the result of accelerated follicle loss, resulting from genetic, autoimmune, and environmental or toxic causes. In women presenting with apparent spontaneous POI (as opposed to an identified genetic cause) an underlying cause is only identified in 10–15 per cent of cases.[3] (Box 1)

Genetic

Turner syndrome (TS) (karyotype XO) is one of the most common causes of POI. In severe cases, pubertal development is absent together with primary amenorrhea and associated defects; however, the degree of ovarian dysfunction and the extent of the defects can be variable. Other defects in the X chromosome make up the other common genetic causes of POI. In addition, there is increasing evidence for an association between pre-mutations of the FMR1 gene (Fragile X syndrome) and POI. POI may also be associated with other genetic syndromes (for example, blepharophimosis/ptosis/epicanthus inversus syndrome [BPES], which is associated with mutations in the FOXL2 gene[4]). Some rare genetic disorders may present with primary hypogonadism without follicle depletion, in which genetic disorders of oestradiol precursor production or aromatase function result in decreased oestradiol and absence of normal follicle-stimulating hormone (FSH) negative feedback).[5,6] As our knowledge of genes involved in ovarian function expands, it is likely that a greater proportion of 'spontaneous' POI will be able to be attributed to genetic abnormalities.

Non-genetic

Non-genetic causes of POI include autoimmune syndromes and ovarian toxins. Autoimmune ovarian failure can occur as part of type I and type II syndromes of polyglandular autoimmune failure, in which there are autoantibodies to multiple endocrine, and other, organs. POI may also be associated with isolated adrenal insufficiency (approximately 3 per cent of women with spontaneous POI develop adrenal insufficiency).[7] The frequency of autoimmune oophoritis in women without coexisting adrenal failure is not known. POI may occur as a result of bilateral oophorectomy (surgical menopause), or after the ovaries have been exposed to ovarian toxins such as chemotherapy (Box 1) and/or radiotherapy. Viral oophoritis has not been systematically demonstrated to be a cause of POI, although there is some evidence for a potential role as an ovarian toxin from animal models and case reports.[8-10] POI is common in women with galactosaemia, and even minor defects in galactose metabolism may adversely affect ovarian function.[11]

Clinical presentation

Frequently the diagnosis of POI is delayed, which may relate both to a lack of awareness that ovarian failure occurs in younger women and because intermittent ovarian function occurs in approximately 50–75 per cent of women with spontaneous POI.[12-14] On average, a woman with POI will present to three medical practitioners before the diagnosis of POI is confirmed.[15]

History

POI should be suspected when there is menstrual irregularity of four or more months' duration, particularly if oestrogen deficiency symptoms (vasomotor flushes, vaginal dryness, night sweats, fatigue and mood changes) are also present. POI may also present with primary amenorrhoea, with or without a delay in pubertal development. Additional features in the history include predisposing factors such as prior surgery, chemotherapy or radiation treatment, or features associated with an autoimmune or genetic syndrome. A family history of POI may give an indication of aetiology, as 10 per cent of cases are familial.[16] Similarly, a family history of Fragile X syndrome, mental retardation, developmental delay, Parkinsonism, intention tremor, ataxia or dementia may indicate the presence of a pre-mutation in the FMR1 gene.[17]

Genetic
- Turner syndrome (TS)
- Other defects in the X chromosome
- Pre-mutation FMR1 gene
- Somatic gene mutations (e.g. BPES, mutations in FOXL2 gene)
- Genetic causes of primary hypogonadism without ovarian follicle depletion (e.g. mutations in genes affecting BMP15, inhibin, CYP17, StAR, FSH receptor, Gs alpha subunit)

Autoimmune oophoritis
- Isolated
- Associated with Addison's disease or polyglandular syndrome

Ovarian toxin
- Chemotherapy (e.g. alkylating agents, methotrexate, 6 mercaptopurine, actimomycin and adriamycin)
- Radiation (typically megavoltage irradiation [4500–5000 rads])
- Galactosaemia
- Infection (e.g. mumps)

Surgery
- Oophorectomy
- Other (e.g. hysterectomy)

Box 1. Aetiology of POI.

Physical examination
Most women with spontaneous POI have unremarkable clinical findings. However, it is important to examine for signs of associated conditions, in particular, adrenal insufficiency, hypothyroidism and TS.

Investigation and diagnosis
The diagnosis of POI is readily confirmed by the finding of an elevated FSH in association with low oestradiol levels. A repeat measurement should be made after at least four weeks to confirm the diagnosis. Once the diagnosis is confirmed, tests to clarify aetiology and to assess for associated syndromes should be undertaken. A standard investigation in a woman with spontaneous POI would routinely include the following tests.

Aetiology
A karyotype should be performed as a part of the routine evaluation. In addition, professional bodies recommend women undergo testing for a pre-mutation in FMR1.[18,19] Adrenal antibodies should be measured, and if positive, an ACTH stimulation test should be performed to exclude Addison's disease. There are no reliable ovary-specific antibody tests for the diagnosis of autoimmune ovarian failure.

Associated conditions
Women with TS need referral to an endocrinologist as this syndrome is associated with many comorbidities. It is reasonable to perform a limited screen for polyglandular autoimmune failure: serum free T4, thyroid-stimulating hormone (TSH), thyroid peroxidase antibodies, HbA1c and an 8am cortisol when no clear aetiology of POI has been identified.

Management
Psychological support
For women with a diagnosis of POI, immediate concerns include loss of fertility, oestrogen-deficiency symptoms and the psychological distress of the diagnosis, particularly if the diagnosis has been delayed and the patient is nulliparous. Face-to-face consultation to inform a patient of the diagnosis is mandatory, and several appointments may be required to provide information about POI at a pace suited to the woman's prior health education and concerns. Patients should be provided with educational resources and support. Parents of younger patients may experience considerable grief and loss when faced with the diagnosis of POI and its implications for future generations, thus support for the wider family is also of importance. In an optimal situation, there should be access to multidisciplinary care, including gynaecology, psychology, fertility services and endocrinology, experienced in management of this condition and use of hormone replacement therapy (HRT).

Hormone replacement therapy
In the absence of an absolute contraindication to taking oestrogen therapy, it is recommended that women with POI receive HRT (in almost all cases with a progestin, as most of these patients have an intact uterus).[20] Good-quality data concerning the efficacy of HRT in women with POI are limited; however, an increasing number of observational studies support the likely beneficial effects of HRT in women to prevent bone loss, and potentially to reduce cardiovascular disease and prevent dementia.[21] The current approach is to treat with a hormone replacement regimen that resembles normal physiology until the average age of natural menopause (age 50–51 years). The potential benefits of HRT should be discussed with all women; those closer to 40 years of age and without symptoms may not wish to commence HRT.

Data are inconclusive regarding the relative merits of the combined oral contraceptive pill (COCP) compared to oral or transdermal HRT. Both are likely to treat oestrogen deficiency symptoms. HRT is a combination of natural oestrogen with a synthetic progestin, intrauterine progestin or natural progesterone. HRT provides physiological oestrogen replacement and is not contraceptive. The COCP contains synthetic oestrogen and is therefore contraceptive, which may be advantageous for some women; in NZ it is more cost-effective. Younger women may find it more acceptable to be on a medication indistinguishable from their peers. Disadvantages of the COCP include the possibility that the risk of venous thromboembolism (VTE) may be greater compared to transdermal HRT preparation and recurrent symptoms when using the inactive tablets. Limited trials suggest a modest advantage of HRT over the COCP for prevention of bone loss.[22]

Although migraine is not a contraindication to HRT, a transdermal preparation may be preferred in this setting. Prior history of VTE,

stroke or myocardial infarction are relative contraindications to oestrogen therapy (ET), but low dose transdermal ET could be considered in consultation with the relevant specialist if benefits were considered to outweigh risks. Women with treated ovarian cancer or low-risk endometrial cancer and menopausal symptoms may be considered for hormone therapy, but non-hormonal options are preferable in women with intermediate-risk or high-risk endometrial cancer. A history of breast cancer is a relative contraindication to HRT and other options are preferred (see www.cancer australia.gov.au/management of menopausal symptoms after breast cancer). BRCA1 and BRCA2 gene mutation carriers without a personal history of cancer may be considered for HRT following bilateral salpingoophorectomy (BSO). A prospective cohort found that HRT did not negate the beneficial effect of BSO on breast cancer risk.[23,24]

Oestrogen is the most effective treatment for moderate to severe symptoms of vaginal atrophy and can take the form of systemic or vaginal ET. A meta-analysis found vaginal ET to be more effective than systemic therapy for treatment of vaginal atrophy.[25] Non-hormonal vaginal moisturisers are the first line of treatment of vaginal atrophy in women with breast cancer.[26]

Androgen replacement

The role of androgen therapy is limited to treatment of sexual dysfunction. Systemic testosterone is associated with improvements in some domains of sexual function (number of satisfying sexual episodes and interest in sex).[27] Recent guidelines suggest against the routine use of dehydroepiandrosterone (DHEA) for sexual function (or other indications) in menopausal women because of its limited efficacy and lack of long-term safety data.[28]

Non-hormonal options

Options for oestrogen deficiency symptoms in women with POI where oestrogen therapy is contraindicated include selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), anti-epileptics and centrally acting drugs.

Managing the consequences of POI

The primary clinician needs to be appropriately informed of the sequelae of POI, particularly infertility, reduced bone mineral density and increased fracture risk later in life, negative impact on psychological wellbeing and quality of life, and potential detrimental effects on cognition.[20] Untreated, POI is associated with reduced life expectancy, largely due to cardiovascular disease, thus smoking cessation and regular assessment of blood pressure, diabetes parameters and lipids should be undertaken, and a 'cardiac friendly' lifestyle should be encouraged. Oestrogen deficiency associated with POI is an important risk factor for bone loss, osteoporosis and fracture.[29-31] At the time of diagnosis, a bone density scan (dual-energy x-ray absorptiometry [DXA]) should be obtained. Women desirous of fertility need support for the loss of fertility, information about the possibility that spontaneous conception may still occur and need to be informed of options to conceive. Oocyte donation remains the best current option to facilitate fertility. In NZ, women need to be under 40 years old, a NZ resident, a non-smoker, and have a body mass index (BMI) under 32 to be eligible for funded oocyte donation. Genetic counselling should be offered to those women with family history of POI, a pre-mutation of the FMR1 gene or other identified genetic abnormalities. If fertility is contemplated in a woman with TS, assessment of current cardiac, endocrine and gynaecology status is mandatory.

Recommendations for follow up

Once the diagnosis is established and a decision is made regarding the use of HRT, ongoing review remains important. Initially, frequent review (three months after commencing HRT) is important to assess medication use (including compliance) and to review suitability of the current treatment regimen. Once an appropriate treatment regimen is established, annual follow up is recommended to monitor HRT use and suitability, assess psychological health and fertility status, and to assess bone and cardiovascular health. Current guidelines recommend bone density measurement after five years as an assessment of compliance in HRT users, and to monitor bone health in those not using HRT.[22] Women should be assessed for symptoms and signs of thyroid disease and adrenal insufficiency and repeat investigation considered. Any woman who has positive adrenal antibodies on initial evaluation is at high risk of developing adrenal insufficiency and should have an annual ACTH stimulation test. Women with TS need particular attention to follow up. The requirement and frequency of screening mammography is determined by other risk factors for breast cancer.

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Physical activity for menopause and beyond

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The menopausal transition is characterised by a change in sex hormone levels where progesterone levels rapidly decrease, oestrogen concentrations are initially stable before fluctuating then declining; while follicle-stimulating hormone and luteinising hormone concentrations increase.[1,2]

These hormonal changes have significant implications for the health status of middle-aged and older women. Specifically, during the menopausal transition many women experience troublesome short- to medium-term symptoms that disrupt daily activities and reduce overall quality of life (QoL).[3] Furthermore, the sustained reduction in oestrogen levels postmenopause combined with the effects of ageing increases the risk of chronic disease,[4] which impairs physical health and function ability leading to greater disability and a transition from independent to dependent living.

Menopausal hormone therapy (MHT) is the most effective treatment for the relief of symptoms and provides some protection from certain long-term chronic disease.[5,6] However, MHT is not without risks[7] and as such it is generally only taken short-term (one to five years). Additionally, some women may be advised not to commence MHT because of pre-existing conditions or not to continue with MHT because of poor benefit-to-risk profiles. For these women, physical activity (PA) may be an effective alternative therapy to minimise menopausal symptoms and improve health status throughout later life. This article briefly reviews the effects of PA on specific symptoms and QoL during the menopausal transition and factors influencing post-menopausal health status.

Effects on menopausal symptoms

Vasomotor symptoms

Most studies have examined hot flushes and night sweats and provide inconsistent findings for an effect of PA on the vasomotor symptoms.[8,9] A systematic review of five randomised controlled trials (RCT), which included 733 menopausal women, reported no difference between PA versus no active treatment (standardised mean difference -0.10; 95% CI -0.33–0.13, three RCTs, 454 women) or between PA versus yoga on symptom frequency (standardised mean difference -0.03, 95% CI -0.45–0.38, two RCTs, n=279 women).[10] Authors noted available evidence was low quality due to limitations in study design and imprecise methods. Therefore, evidence is currently insufficient to support the use of PA in the direct treatment of vasomotor symptoms alone. However, PA may be of indirect benefit through assisting with weight management where obesity is a known risk factor for vasomotor symptom frequency and severity.[11]

Psychological symptoms

Most, but not all,[12] evidence is consistent that PA improves mood, anxiety, cognitive function and other psychological symptoms associated with menopause.[13] Mansikkamaki et al[14] using proportional odds ratios (PORs) from ordered logistic regression models (n=2606 menopausal women) observed that physically inactive women had an increased probability of anxiety/depressed mood (POR 1.44; 95% CI 1.26–1.65) and memory/concentration problems (POR 1.48; 95% CI 1.29–1.70) compared with women meeting recommended physical activity levels. Such findings remained significant after adjusting for confounding variables. Additionally, a four-month RCT that included previously low-active menopausal women (n=164) compared the effects of walking, yoga and a non-PA control group reported that the walking and yoga groups only improved positive affect (Cohen's d 0.16–0.47 SD) and reduced negative affect (Cohen's d -0.21–0.68). These effects were also observed to be associated with reductions in other menopausal symptoms and increases in aerobic fitness.[15] Overall, evidence supports the use of PA in the direct treatment of psychological symptoms accompanying menopause.

Somatic symptoms

Bothersome somatic symptoms during menopause may include back pain, muscle pain and numbness, among others. Moilanen et al[3] using multiple linear regression (n=1427 menopausal women; mean age 47 years) observed that after adjusting for background characteristics, reported participants that performed regular PA experienced fewer somatic symptoms compared with sedentary participants (beta coefficient 0.18, 95% CI 0.10–0.27). It was also observed that participants with chronic disease experience increased symptoms compared with asymptomatic participants. Additionally, a large cross-sectional study of women aged 46–55 years

(n=2399) reported that after accounting for menopausal status women identified as being in the maintenance stage of change for PA were 21 per cent less likely to experience somatic symptoms compared with participants in the pre-contemplation, contemplation or preparation stages.[16] However, these effects were also associated with body mass index (BMI) where participants with higher values experienced greater somatic symptoms. Not all studies examining the effect of PA on somatic symptoms in menopausal women report beneficial outcomes.[17] As such, evidence does not support the use of PA in the direct treatment of somatic symptoms alone.

Quality of life

Higher PA levels during the menopausal transition are consistently associated with an improved QoL even after adjusting for other symptoms.[18] Moilanen et al[19] using ordinal regression in an eight-year follow-up study (n=1165 postmenopausal women; mean age 56 years) reported that participants with stable (Beta coefficient=1.46) or increased (Beta coefficient=1.49) PA levels relative to baseline had higher QoL scores than women whose physical activity levels declined. QoL was also influenced by stable weight (Beta coefficient=1.26) across the follow-up period. Additionally, Mansikkamaki et al[14] reported after adjusting for education and BMI the POR for higher global QoL was 1.63 (9% CI 1.40–1.89) for menopausal women that achieve recommended PA levels compared with those less active. Therefore, the evidence supports the use of PA to improve QoL in menopausal women. The contrasting effects of PA on vasomotor and somatic symptoms compared with QoL suggests that PA may provide menopausal women with general symptom management rather than the therapy for specific symptoms themselves.[20] This may also explain why vasomotor and somatic symptom covary with BMI and aerobic fitness, which are both strongly associated with PA levels.

Effects on factors influencing postmenopausal health status

Skeletal muscle mass and strength

Women aged 70–80 years demonstrate declines in muscle mass and strength of 20–35 per cent compared with young and middle-aged women.[21,22] The loss of muscle mass and strength with age impairs functional status,[23] promotes musculoskeletal disability[24] and increases risk of both cardiometabolic disease[24] and falls.[25] PA may increase muscle mass and strength postmenopause by 9–13 per cent (a decade of age-related muscle loss) and 15–20 per cent (up to two decades of age-related strength loss), respectively, following as little as 10 weeks.[26] The effects of these changes on overall physical health, functional ability and QoL are seriously underappreciated[27] and should be a primary therapeutic target for maintaining or improving health status in all middle-aged and older women. Resistance training is the most effective means to stimulate muscle hypertrophy and develop strength. Many middle-aged and older women are apprehensive about participating in resistance training due to a lack of self-efficacy or fear of injury. To date, no studies have reported any adverse effects of appropriately prescribed and supervised resistance training in women of any age.

Bone health, fractures and falls

Bone mineral density (BMD) in postmenopausal women may increase through PA by a magnitude of 0–2 per cent over 1–2 years, while BMD in most control groups typically declines by around 1 per cent per annum.[28] Additionally, a large meta-analysis by Qu et al[29] – including 14 843 fractures from 22 cohort studies – reported an overall relative risk of fracture of 0.71 (95% CI 0.63–0.80) and a 38 per cent (95% CI, 0.54–0.69) and 28 per cent (95% CI 0.49–0.96) lower risk of hip and wrist fractures, respectively, in postmenopausal women with the highest PA levels compared with the lowest.[29] Thus, participation in PA interventions to maintain, if not slightly improve, bone mass and reduce the risk of fractures is worthwhile. The most effective PA intervention for bone health involves resistance training combined with high-impact/weight-bearing activities.[30]

Considerable evidence indicates that falls are inversely related to PA levels in older adults, including postmenopausal women.[31] Furthermore, falls are not random events, but can be predicted by a number of risk factors, including lower limb muscle strength, gait and balance, all of which can be improved with appropriate PA.[32] A meta-analysis of 17 RCTs (n=4305 postmenopausal women) reported that PA was associated with pooled estimates of the rate ratios of 0.63 for all injurious falls (95% CI 0.51–0.77), 0.70 for falls resulting in medical care (95% CI 0.54–0.92), and 0.39 for falls resulting in fractures (95% CI 0.22–0.66, 6 trials).[33] PA interventions that include resistance training with balance and mobility activities that challenge stability are most effective for falls prevention in older adults.[34,35]

Effects on cardiometabolic health and mortality

PA is highly important for both the prevention and/or management of cardiometabolic disease[36] where it has a clear dose-dependent effect and inverse relationship with mortality.[37] Postmenopausal women that are more physically active and/or have higher levels of fitness demonstrate less weight gain, reduced waist circumference, decreased abdominal obesity, higher HDL cholesterol, lower blood pressure and improved fasting glucose.[38,39] Furthermore, physical activity is inversely associated with all-cause mortality in both older men and women. However, it appears that this relationship is stronger for women than men and that benefit can be achieved from even low-activity levels.[40] A combination of moderate intensity aerobic PA and high-intensity interval training (HIIT)[41] is most effective for improving cardiometabolic risk factors mortality risk reduction.

Summary and physical activity recommendations

Regular participation in PA is essential for healthy ageing, but is particularly important for middle-aged and older women to facilitate the transition through menopause and prevent and/or manage chronic disease related to oestrogen deficiency and ageing.

Cycling is one of many ways to exercise outdoors. © Monkey Business Images, Shutterstock, 12530353.

Walking has shown to be a beneficial form of physical activity that improves menopausal symptoms. © FamVeld, Shutterstock, 484254748.

Where PA has not been demonstrated to have a direct effect on specific menopause symptoms, it may provide benefit through assisting to modify risk factors for symptom development, such as BMI and aerobic fitness. Regardless, PA supports menopausal women by improving overall QoL.

Given the substantial health benefits associated with PA, women should be strongly encouraged and supported to commence regular PA from 40 years of age (if not earlier) to develop physiological reserves in preparation for the deleterious effects of menopause and subsequent ageing on health status and functional ability.[42] Regular PA for all women should involve both aerobic and resistance training combined with flexibility and balance activities as described in considerable detail elsewhere.[43] However, the precise prescription for each type of PA should vary based on the participant's age, menopausal stage (for example, pre-, peri- and postmenopause), and individual risk profile.

Although otherwise healthy older adults are not at greater risk of injury from participation in PA,[44] it is essential that risks for adverse PA-related events and existing comorbidities are identified and appropriately managed. Exercise scientists and exercise physiologists accredited with Exercise and Sports Science Australia (AES and AEP, respectively) hold a minimum three-year Bachelor qualification and have the knowledge, skills and competencies to design, deliver and evaluate safe and effective exercise interventions for people, including women in all stages of menopause.

Finally, although evidence that regular PA provides considerable health benefits regardless of age, gender and health status is more than compelling, long-term PA adherence in the community is typically low. As such, it is critical that any PA intervention has a strong focus on achieving behavioural change if life-long health benefits are to be achieved.[45]

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The Women's Health Initiative: 14 years on

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The Women's Health Initiative (WHI) postmenopausal hormone therapy trials were a landmark investigation of the safety of menopausal hormone therapy (MHT). The trials aimed to assess the risks and benefits of MHT in order to evaluate its appropriateness for chronic disease prevention. Two frequently used hormone formulations at the time were compared against placebo: conjugated equine oestrogens alone and in combination with medroxyprogesterone acetate.

Early results were dramatic, with the combined arm ending after an average of five years largely due to increased breast cancer risk. Similarly, the oestrogen-only arm was ended after seven years due to an increased risk of stroke. Long-term post-treatment follow-up has been conducted over 14 years. This article provides an overview of some of the major outcomes assessed in the trials and outlines the current understanding of the impact of MHT.

Cardiovascular disease

The effect of MHT on coronary heart disease (CHD) differed between the two trials. Combined-MHT was associated with a non-significant increase in coronary events during treatment, with an additional six coronary events for every 10 000 women treated per year. However, over long-term follow up, the data suggest a dissipation of risk shortly after treatment cessation.[1,2,3]

The effect on CVD risk appears to be unrelated to patient age. However, a more harmful effect on cardiovascular health is demonstrated in those further from menopause, although the results are only significant when initiated in women more than 20 years since menopause onset.[3,4,5]

Oestrogen-only MHT demonstrates a more favourable cardiovascular risk profile, with CVD risk remaining neutral throughout intervention and follow-up.[3]

Overall, there appears to be no significant increase in CVD risk with MHT use in healthy women aged less than 60 years and within 10 years of menopause for up to six years of treatment. Recent observational data suggest transdermal oestrogen preparations may be associated with reduced risk of CVD events, but this has not been examined by higher-level studies.[6]

Breast cancer

Combined-MHT is associated with a significantly increased risk of breast cancer. During treatment, an additional nine breast cancers occurred per 10 000 women treated with combined-MHT beyond five years of use. Furthermore, malignancies tended to be more advanced at diagnosis, possibly because combined therapy increases breast density, thereby increasing the potential for abnormal mammography.[3,7,8] Long-term follow-up demonstrates an attenuated risk with each year after treatment cessation.[1,3,9]

The effect on breast cancer risk appears independent of patient age. However, observational data suggest increased risk when combined-MHT is initiated within five years of menopause.[4,10,11,12] This is in contrast to the evidence regarding venous thromboembolism (VTE), stroke and coronary CHD, all demonstrating greater safety in younger postmenopausal women.

The oestrogen-only WHI trial demonstrated no increase in breast cancer risk for seven years of treatment and a significantly reduced risk over long-term follow up.[2,3] This effect was consistent across all age groups and independent of menopause onset. More recent observational data suggest similar safety with up to five years of therapy.[13] These results contradict observational data from the Million Women Study,[14] and may be due to different oestrogen preparations, MHT use prior to enrolment and differing baseline participant characteristics.[15]

The clear difference in breast cancer risk between hormonal regimens supports research on the carcinogenic potential of progesterone on breast tissue.[10] However, the effect on risk profiles between various progestins and cyclical versus continuous progesterone therapy has not been assessed in high-level studies.

Stroke

The risk of stroke was significantly increased in both WHI clinical trials. The risk of ischaemic stroke was increased by 37 per cent and 35 per cent with combined-MHT and oestrogen-only therapy, respectively, reflecting an additional 9–11 strokes per 10 000 women treated per year. The risk of haemorrhagic stroke was unchanged.[3,17] Data from long-term follow-up suggest dissipation of this risk after treatment cessation.[1,2,3]

The excess risk conferred by MHT appears independent of time since menopause and is only significant for women aged older than 60 years.[18] Furthermore, the absolute risk for stroke in women under 60 years is low and is a clinically important consideration for symptomatic women considering MHT. Observational data suggest low-dose transdermal preparations may not be associated with an increased risk of stroke.[6,19]

VTE

The WHI demonstrated a significantly increased risk of VTE in both hormonal regimens. During treatment with combined-MHT, the risk of pulmonary embolism (PE) doubled and the risk of deep vein thrombosis (DVT) was increased by 87 per cent. Oestrogen-only MHT demonstrated an increase in DVT of almost 50 per cent and a non-significant increase in PE. The effect of MHT on VTE risk did not appear to be age related.[3]

Long-term follow up shows the increased risk of VTE dissipates rapidly following cessation of treatment.[1,2] No difference in risk profile has been demonstrated between various progestogens and observational data suggest transdermal preparations may not be associated with increased VTE risk.[18,20,21]

Fracture

Both hormonal regimens demonstrated 33 per cent reductions in hip fracture when compared to placebo, reflecting six fewer fractures per 10 000 women treated per year. Although this effect is reduced after cessation of therapy, some benefit persists for up to 13 years following combined-MHT.[3] While MHT is not first-line management for osteoporosis, current guidelines support its use in premature (age less than 40 years) or early (age less than 45 years) menopause for bone preservation.[15,22]

Conclusion

The use of MHT for menopausal symptoms requires an individual and holistic approach with considerations of personal risk factors and quality of life. The risk-benefit profile appears less favourable for combined-MHT and generally more favourable in younger, more recently postmenopausal women. On balance, MHT appears to be safe for healthy women under 60 years, and within 10 years of menopause, for less than five years of therapy. Current data do not support the use of MHT in chronic disease prevention. Current menopause guidelines advise against the use of MHT in women at high risk of, or with established risk factors for, the major adverse events outlined.[15,22]

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The changing demographics of menopause

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A senior colleague once reflected to me that a large part of clinical gynaecological practice was a relatively recent phenomenon. Imagine practising in the 1800s, at a time when there was no hormonal contraception and the average female life expectancy was about 50. Women married at a younger age than today and would bear an average of six to eight children, breastfeeding each child until the next one was born two or three years later. Menstrual problems, a large part of everyday gynaecological practice, were soon superseded by the next pregnancy, while for many women menopause occurred very near the end of their lives. This is not the case today. An Australian woman born in 1881–90 would be expected to live until 51 years of age, while a woman born in 2007–09 is expected to live until she is 84. Similarly, a 45-year-old Australian woman in 1881–90 was expected to live another 26 years, while a 45-year-old woman in 2007–09 is expected to live another 40 years.[1] The average age of menopause has, however, remained stable at around 50 years old.

The effect of an increasingly longer postmenopausal life leads to a number of social and biological considerations. In 2015, Sanderson and Scherbov published a demographic paper that was popularly reported with headlines such as '60 is the new 40'. In their paper, they proposed that old age should not be defined by an arbitrary number such as 60 or 65, but rather be defined by a predicted remaining life expectancy such as 10, 15 or 20 years.[2] In conjunction with an increased life expectancy, it means that many women will live more years postmenopause before they and society consider themselves old. For example, this is seen in workforce figures in Australia, with a 2015 report by the Australian Institute of Health and Welfare (AIHW) projecting that the labour force participation rate of women aged 65–69 is expected to increase from 20 per cent to 35 per cent by 2060.[3] Anecdotally, women expect to maintain an active work, social, and sexual life well past menopause and are planning to ensure that their health enables this.

Increased life expectancy will result in women living for many more years with a lower oestrogen physiology than previous generations. An Australian woman aged 65 in 2007–09 is expected to live until 87 years old, with the result being that a significant number of women will live more years postmenopause than in their reproductive years. Two areas of concern with women living for many years postmenopause include the effect of menopause on bone density and cognitive function.

Bone density is maintained by the balance between osteoblasts, which lay down bone, and osteoclasts, which remove bone. The reduction of oestrogen after menopause increases both osteoblast and osteoclast activity, but in an unbalanced fashion such that bone density decreases rapidly in the years postmenopause.[4] Women are estimated to lose approximately 10 per cent of their bone density in the first five years of menopause.[5]

It is estimated that half of all women over the age of 60 years will experience at least one fracture due to osteoporosis.[5] The consequences of osteoporosis include an increased risk of hip fractures. In 2006–07 there were 16 518 osteoporotic hip fractures among Australians aged 40 years or over (175 per 100 000 persons) with almost three-quarters of these occurring in women. Around one in nine people hospitalised with osteoporotic hip fracture in 2006–07 were discharged to residential aged-care service, where this had not previously been their place of residence, and less than 50 per cent of people regained their pre-fracture walking ability one year after their fracture.[6] Fortunately, there are a number of effective treatments for postmenopausal bone density loss. Oestrogen hormone therapy, selective oestrogen receptor modulators (SERMs), antiresorptive medications, including bisphosphonates, vitamin D and calcium, as well as physical exercise can all prevent or treat osteoporosis.

An extended postmenopausal life expectancy provides a greater exposure to other maladies of advanced age. Of concern to many women is the possible effect of menopause and postmenopausal life on cognitive function. While there is considerable evidence linking oestrogen levels and cognitive function along with a link between earlier age of menopause and decreased cognitive performance later in life, other studies show no significant lasting cognitive changes attributable to menopause.[7] In contrast to the prevention and treatment of osteoporosis, the prevention of cognitive decline is less certain. Initial observational studies of the effect of hormone treatment on cognitive function were promising, with some earlier studies reporting as much as a 50 per cent reduction in Alzheimer's disease risk in women using hormone therapy. Later randomised controlled trials, such as the Women's Health Initiative (WHI), WHI Memory Study (WHIMS) and WHI Study of Cognitive Aging (WHISCA); however, have shown increased dementia risk

and poorer cognitive outcomes in older postmenopausal women randomised to hormone therapy versus placebo. It has been suggested that these results may be attributed to there being a 'critical period' early in menopause when the positive effect of oestrogen replacement on cognitive function is greatest.[7]

As professionals advising women on the management of menopause and later life, it is important that we are cognisant of the long-term health and social changes that are occurring with a longer life expectancy. In essence, women expect a high quality of life for many years postmenopause and their healthcare should be tailored to allow this. Future research, particularly into the long-term effects of hormone therapy and measures that may prevent cognitive decline, will become increasingly important in future decades.

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Treating women with special considerations

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Menopause symptoms are severe in 20 per cent of women, affecting their ability to function normally. The major symptoms of menopause are hot flushes and sweats, which are often worse at night, causing frequent waking. This leads to poor and interrupted sleep, which in turn causes tiredness and irritability. Other symptoms include aches and pains, which are the genitourinary symptoms relating to oestrogen loss.

Menopausal hormone therapy (MHT) is the 'gold standard' for treating severe menopause symptoms. It is recommended to commence MHT within 10 years of the final menstrual period, or between 50–60 years of age, as the risks associated with MHT are low during these time periods. However, women who have an early or premature menopause are recommended to take MHT until the expected age of menopause, not just for symptom relief, but to also reduce the risk of early onset of osteoporosis and cardiovascular disease.

Many women, however, have other comorbidities that affect their health and may complicate the management of their menopause symptoms. Some comorbidities exclude the use of MHT, while others may modify the type of hormone therapy prescribed.

There are few absolute contraindications for the use of MHT for the treatment of menopause symptoms. If symptoms are distressing and adversely affecting a woman's quality of life (QoL), benefits of therapy must be weighed up against potential side effects.

Special considerations

1. Suspected, active or history of breast cancer
2. Venous thromboembolism (VTE) or thrombophilia (not taking anticoagulants), past venous thrombo-embolic event
3. Undiagnosed/abnormal vaginal bleeding
4. Active liver disease/gallstones
5. Uncontrolled hypertension
6. Cardiovascular disease (hypercholesterolaemia, hypertension, diabetes, ischemic heart disease) or the risk of it
7. Suspected, active or history of endometrial cancer and ovarian cancer
8. Endometriosis
9. Migraine
10. Obesity
11. Porphyria cutanea tarda (PCT)

Non-hormonal medications

There is a range of prescriptive non-hormonal medications that can be offered in circumstances where MHT is not recommended. The efficacy and potential side effects of each option needs to be weighed up carefully. If these medications are to be effective in reducing hot flushes and sweats, it will be evident within the first four weeks of their use.

Regular follow up in the first six months to monitor symptoms and mitigate risk, dependent on the patient's symptoms and medical conditions, is required.

Some of the most common prescription medications for management of menopausal symptoms are outlined below:

- Antidepressants: selective serotonin or serotonin-norepinephrine reuptake inhibitors (SSRIs/SNRIs) such as escitalopram, paroxetine, sertraline, venlafaxine and desvenlafaxine have been studied and found to relieve hot flushes by 50–60 per cent. Some common side effects reported are nausea, xerostomia, sexual dysfunction and insomnia. Sweating may also be a side effect.
- Clonidine: centrally acting, alpha-2 agonist, hypotensive agent and mild sedative. It has shown to be effective in reducing vasomotor symptoms by up to 50 per cent. Some common side effects may include dizziness, xerostomia, postural hypotension and somnolence.
- Gabapentin: an anticonvulsant that is used to treat epilepsy and chronic nerve pain, and has been shown to diminish hot flushes by up to 60 per cent. Its side effects may include somnolence, ataxia, dizziness and drowsiness.

Non-prescriptive therapies

Lifestyle modifications – including dressing in layers, using fans, cold packs, facial water sprays and identifying and avoiding triggers such as caffeine, alcohol, hot liquids and spicy foods – may be helpful. Weight loss may also reduce vasomotor symptoms. Exercise has not been shown to reduce vasomotor symptoms.

Cognitive behavioural therapy, mindfulness therapy and hypnotherapy have been shown to reduce vasomotor symptoms, while acupuncture studies suggest insufficient evidence of efficacy.

Studies of across-the-counter therapies, including herbal remedies such as black cohosh, red clover and St John's Wort, are

inconsistent. Some phytoestrogens have been shown to be effective in reducing vasomotor symptoms. Safety data, however, for phytoestrogen supplements in breast cancer patients have not been established. Black cohosh is not a phytoestrogen and may work in a similar manner to the neurotransmitters.

Vaginal lubricants and moisturisers

Lubricants recommended are water-based, as they have fewer side effects than silicone-based brands. There are many additives in lubricants, including preservatives and parabens, that affect osmolality and pH.

The effectiveness of the lubricant therefore depends on the osmolality and pH of each product. High osmolality of more than1200mOsm/kg is associated with irritation, contact dermatitis and cytotoxicity.

Moisturisers are used to rehydrate the dry vaginal tissues by changing the fluid content in the epithelium, absorbing and adhering to it, mimicking vaginal secretions and lowering the pH. They are effective for 2–3 days. Moisturisers also contain polymers for adherence and other additives that affect osmolality and pH.

Conditions to consider

In women with special considerations, a multidisciplinary team approach will help to optimise management and treatment. Liaising with each of the patient's treating health professionals allows the individual woman the opportunity to weigh up the risks and benefits of the recommended treatments.

Breast cancer survivors

Breast cancer survivors, especially when menopause is a result of the breast cancer treatments, will frequently have more severe vasomotor and genitourinary symptoms than women without breast cancer. Up to 95 per cent of women with a history of breast cancer will complain of vasomotor symptoms and 50–75 per cent will complain of at least one genitourinary symptom. For vasomotor symptoms, non-hormonal preparations are recommended. First-line therapy is usually either a SSRI/SNRI or gabapentin.

Escitalopram is considered the most effective SSRI, with fewer side effects. The recommended dosage is 10–20mg. Venlafaxine has been used for many years and the effective dose is 75–150mg. Gabapentin is particularly effective in women who have a major sleep disturbance due to the vasomotor symptoms regularly interrupting sleep, as it causes drowsiness and somnolence as well as reducing the menopause symptoms. The recommended dose is 900mg at night. If clonidine is prescribed, the dose recommended is 100–150μg nightly. Women should be advised to have their blood pressure checked because of the possible side effect of hypotension. All of these medications should be started slowly with the lowest dose, building up to the recommended dose depending on the side effects and symptom response. Fluoxetine and paroxetine are cytochrome P450 2D6 inhibitors and should not be used in women who are taking tamoxifen, as they can inhibit the tamoxifen effect and increase the possible risk of further disease.

For genitourinary symptoms, treatment will depend on which symptoms are bothersome. Lubricants and moisturisers are recommended initially in woman experiencing vaginal dryness and some discomfort during intercourse. If symptoms are more bothersome and severely affecting QoL, then vaginal oestrogen preparations may be considered. The use of vaginal oestrogen in breast cancer survivors is controversial, especially in those women on aromatase inhibitors (AIs), as long-term safety has not been confirmed. Further research is needed.

Oestradiol preparations are not recommended because of the safety concern that oestradiol levels will be elevated systemically and therefore increase risk of recurrence. The low-dose oestradiol 10μg vaginal tablet, however, has a very low absorption over a 12-month period of 1.14mg oestradiol. Oestriol preparations do not elevate the oestradiol level as they are not transformed into oestradiol or oestrone.

Oestriol vaginal creams or pessaries are considered to be the more appropriate therapy to use. Some studies have suggested using these preparations intermittently for short periods of time.

VTE or thrombophilia

Non-hormonal therapies are recommended in high-risk women and those with a thrombophilia. Before prescribing hormone therapy, careful assessment of personal and family history of VTE is essential. Oral oestrogen therapy is contraindicated in women with a history of VTE. Transdermal MHT has a very low thrombotic risk, whereas tibolone shows no prothrombotic risk. These therapies may be suitable in low-risk or normal women, or those on anticoagulants. Some oral progestogens, such as medroxyprogesterone acetate, norethisterone derivatives and continuous combined regimens are associated with greater risk of VTE compared to dydrogesterone and progesterone. Discussion with the woman's haematologist is appropriate before prescribing any therapy.

Abnormal vaginal bleeding

Undiagnosed vaginal bleeding is a contraindication for MHT. The cause of the bleeding needs to be determined and treated before MHT for menopause symptoms is considered.

Active liver disease/gallstones

Oral MHT increases the risk of cholecystitis, but transdermal therapies do not have the same effect and therefore are appropriate in symptomatic women.

Uncontrolled hypertension

Hypertension should be treated with antihypertensive medications. Once the blood pressure is controlled, MHT may be appropriate.

Cardiovascular disease or at risk

Symptomatic women with cardiovascular disease should be assessed carefully. Consultation with the woman's cardiologist or physician prior to prescribing MHT is necessary. Avoid MHT if multiple risks are present; transdermal therapies may be appropriate if symptoms are affecting the woman's QoL.

Endometrial and ovarian cancer

Early-stage endometrial cancer is not a contraindication to oestrogen replacement therapy. Studies are limited in the use of MHT in in higher stages of the disease. Ovarian cancer is not a contraindication to MHT except germ cell tumours. Oestrogen or tibolone are suitable.

Endometriosis

Surgical menopause is a consequence of hysterectomy and bilateral salpingo-oophorectomy for severe, recurrent endometriosis with chronic pelvic pain. There is controversy regarding the most appropriate therapy. Some experts recommend low-dose oestrogen therapy, whereas others recommend combined continuous MHT. Tibolone may also be suitable.

Migraine

Migraine without aura is not a contraindication to MHT, but non-oral transdermal continuous therapy is recommended. Some studies suggest high-dose oestrogens will provide more migraine control. The safety of hormone therapy in migraine with aura has not been established.

Obesity
Transdermal therapies are more appropriate than oral preparations because of the increased thrombotic risk with obesity.

PCT
All forms of MHT are contraindicated in PCT. Non-hormonal therapies are suitable for menopause treatment.

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Natural therapies for treatment of hot flushes

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It's worth taking a minute to think about how you wish to approach the menopausal patient in your practice. How are you meeting her needs? Approximately 25 per cent of menopausal women will have moderate to severe symptoms affecting their quality of life (QoL). For treatment trials, the US FDA uses the definition for treatment as having more than seven to eight moderate to severe hot flushes per day.

Most commonly, women present with one or more of the following: hot flushes, night sweats, mood disturbance, sleep problems, low libido and/or genitourinary symptoms. Typically, surgical menopause causes more severe symptoms.

We do not understand why some women get severe symptoms while others don't. It may be due to differing baseline levels of oestradiol and/or oestrone after menopause or something to with the oestrogen receptors. But one in four is a lot of women with severe symptoms. I use this useful 'technical' term – it's all to do with your personal 'hormonal soup'. Women understand this as they understand that some oral contraceptive pills suit some and not others and that some woman have premenstrual symptoms and others don't. We are all different.

The indications for treatment are moderate to severe symptoms that are affecting QoL. I ask the patient how it is affecting her QoL, as she is the judge. Your patients will ask you about their treatment options. Many of them will have tried over-the-counter medications. In our clinic, the fundamental principal of advice and treatment is that it should be evidence based and that we are clear about the knowledge gaps. This commentary covers 'natural' therapies.

Key points
- 'Natural' is a marketing word
- No herbal therapeutic agents have been show to consistently reduce flushes
- All therapeutic agents have risks, benefits, side effects and interactions
- Ask women which CAMs they are taking
- Check for drug interactions
- Support women, but give them the facts
- Practice evidence-based medicine

'Natural' therapies for hot flushes

This is a really short discussion. 'Natural' is a marketing word and has no basis in science. If it's a pill, a douche, a cream or a spray, it's a therapeutic agent and, as such, it has risks, benefits, side effects and drug interactions. In many cases for 'natural' therapies, we just don't know what the risks, benefits, side effects and interactions are.

Although the first menopausal hormone therapy (MHT), premarin, was marketed in Canada in 1941, the first randomised controlled trial (RCT) on its long-term risks and benefits was not completed until 2002. The WHI study was the first RCT to demonstrate increased risk of venous thromboembolism (VTE) and breast cancer, and this study had to enrol 16 000 women in a trial for five years to get these answers.[1] There are now a number of small RCTs looking at 'natural' treatments, but the safety profiles are incomplete.

Women want natural

Many women look to 'natural' therapies, which are sometimes called complementary and alternative medications (CAMs), to treat their menopause symptoms. The web is a maze, with 26 million hits for menopause alone and 750 000 for natural treatments.

Due to the well-publicised risks of MHT, women understandably want to manage their symptoms without running health risks such as VTE or breast cancer. The use of CAMs is high, with one recent review finding that approximately 47 per cent of menopausal women use a CAM for menopause symptoms in any one year, and only half disclose this usage to their doctor.[2] Many unsubstantiated claims of health benefits are made for these products. Regulation of content, standardisation of dosage, and accurate labelling of safety and efficacy should be required and would serve to increase public and professional confidence in these products.

The most popular CAMs are herbs, phyto-oestrogens and yoga.[2] More recently, mindfulness, cognitive behavioural therapy (CBT) and acupuncture are being used more and more.

CAMs represent a substantial cost. It's estimated that women in Australia and the US spend $2 billion and $34 billion in their respective currencies on alternative therapies annually.[3]

Take a complete history

Your patients are taking multiple CAMs and they won't tell you unless you ask. They will

Which 'natural' treatments reduce hot flushes?
- Cognitive behaviour therapy
- Mindfulness

What does not reduce hot flushes?
- Exercise
- Vitamin E
- Evening primrose oil *
- Phyto-oestrogens* including wild yam cream, red clover, soy products
- Black cohosh *
- Kava*
- St John's wort **
- Wild yam cream
- Dong quai * **
- Ginseng * **
- Probiotics
- Acupuncture

* safety concerns
** interactions with other drugs

Box1. Effective and ineffective 'natural' treatments.

then often drag out a big bag of goodies, as two of my patients have done. They take many of these simultaneously (Box 1). Both these patients were trying to find a 'natural' treatment for flushes and both had not had a full night's sleep for more than a year due to their menopause symptoms. Most products have a strong placebo effect, with initial reduction in symptoms that will often wear off by three months, hence they cycle through products and get poor levels of relief.

Phyto-oestrogens (plant oestrogens)

Phyto-oestrogens are weak oestrogens found in plants and form the basis for a number of over-the-counter products. More than three hundred plants have known phyto-oestrogen activity. The most commonly involved plants are soybeans, chick peas, red legumes and red clover. Trials to date have shown limited effectiveness on hot flushes compared to a placebo and long-term safety is unknown. If these products are acting as oestrogens, they may well have the same risks. Caution is warranted for patients with oestrogen-dependent cancers.

Taking a complete history of products being used is very important as many of these products can interfere with traditional medicines, not to mention the bank balance.

One of the positive consequences of the WHI trial on MHT is that there has been an upsurge in more rigorous research to investigate potential herbal treatments. Unfortunately, to date, no 'natural' therapy has been shown to be superior to placebo for the treatment of hot flushes.

Black cohosh

I had high hopes for black cohosh, as preliminary trials were exciting, but two very good RCTs have since shown no effect. Further, black cohosh may have a negative effect on breast cancer cell lines and is now not recommended for breast cancer patients. There have been numerous international reports of liver toxicity with black cohosh, with some resulting in transplant or death. More recent evidence suggests the harm may be related to product contamination with other harmful substances. A review by Health Canada of black cohosh products resulted in the voluntary withdrawal of several products that did not contain authentic black cohosh.

Kava

Kava does not reduce hot flushes and is not recommended due to liver toxicity that has led to the US FDA issuing a warning and Health Canada banning the sale of this drug.

Wild yam creams

These preparations contain steroidal saponins and sapogenins, including diosgenin. Diosgenin has a weak oestrogen-binding activity. There are no long-term safety data, although diogensin possesses both pro- and anti-neoplastic effects.[4] The manufacturers claim the active ingredients cross the skin and are converted in vivo to sapogenins and subsequently to progesterone, which reduces the hot flushes. This is rubbish! An RCT with wild yam topical cream has shown no significant effect on blood pressure, progesterone levels or symptom scores.[4]

Evening primrose oil

Although promoted for relief of hot flushes, there has only been one RCT, which showed no benefit over placebo. There are many reported side effects, including nausea, diarrhoea and an antiplatelet effect. It can induce seizures in patients taking antipsychotics. It should not be used with anticoagulants or phenophiazines.

Dong quai

This substance provides no relief for hot flushes. Use with caution as it can cause bleeding complications. Not to be used if a person has haemophilia or in conjunction with warfarin.

Ginseng

Ginseng may help sleep disturbance and mood, but does not reduce flushes. Case reports have associated ginseng with mastalgia and postmenopausal bleeding. Interactions have been observed with alcohol, warfarin and penelzine.[5]

Dong quai and ginseng both stimulate growth of MCF-7 cells that does not seem to be due to oestrogen activity and as such should be avoided in breast cancer patients. MCF-7 is a tumour cell line associated with breast cancer.

St John's wort

St John's wort works for mild to moderate depression, but has not been effective in reducing hot flushes. Due to induction of cytochrome P450 enzymes, it interacts with various drugs, including warfarin and oral contraceptives.

Probiotics

Preclinical studies suggest that probiotics may increase the bioactivity of some phyto-oestrogens by changing the gut biota, but these results have been inconsistent.[6] The important question is, if this does happen, do we want more oestrogen activity from these plant substances or will that create similar risks as with conventional MHT?

In my practice, I have noted that women may get breakthrough flushing when they commence probiotics. This is anecdotal only, but worth taking a history if your patient has problems.

Acupuncture

The evidence is inconsistent as to whether acupuncture decreases hot flushes; more rigorous research is needed

Cognitive behavioural therapy

CBT has been found to reduce the perceived burden of hot flushes in patients with or without breast cancer and may be suitable depending on availability.[7]

Mindfulness

This involves patients learning to recognise and discriminate more accurately between components of experiences, including thoughts, feelings and sensations, and developing the ability to be non-reactive. This enables the person to observe, appraise and be less reactive to events in their internal and external environment. RCT evidence suggests mindfulness practice reduces bothersome flushes compared to control (14.77 per cent versus 6.79 per cent).[8] This may be helpful for some women, but long-term sustainability is unknown.

Exercise

Exercise improves QoL but does not reduce hot flushes.

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Q&a

For the broader *O&G Magazine* readership, balanced answers to those curly-yet-common questions in obstetrics and gynaecology.

Q *'Your patient is a 40-year-old woman, now at 39 weeks gestation. What is the safest course of action; induction or wait?'*

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a In Australia, the proportion of mothers giving birth aged 35 and older has doubled from about 11 per cent in 1991 to 22 per cent in 2014.[1,2] The proportion has almost trebled, from 1.6 per cent to 4.6 per cent, for women giving birth after age 40. Older maternal age is associated with both adverse fetal and maternal outcomes, and a higher prevalence of pre-existing maternal comorbidities, such as hypertension, obesity and diabetes. However, when epidemiological data is adjusted for these confounders, advanced maternal age remains an independent risk factor for perinatal mortality.[3]

It may follow, therefore, that electively limiting the duration of pregnancy may prevent stillbirth at late gestations in older mothers. There are no randomised controlled studies that address this hypothesis, and so our patient counselling is informed by our interpretation of epidemiological data, our individual assessment of each patient's risk, and the wishes of our patient.

Like any management dilemma in pregnancy, our task is to provide the patient with the relevant information; not just about the perceived risk, but also about the implications of the available treatment approaches. Importantly, this information needs to be put into perspective and viewed in context with the patient's individual circumstances, beliefs and values to assist them with informed decision-making.

Older mothers should be reassured that, while some pregnancies are affected by stillbirth, the vast majority of babies are born healthy and well. While older age is a risk factor, stillbirth remains an uncommon outcome of pregnancy across all maternal age groups. Nevertheless, analysis of epidemiological data from more than five million singleton births in the USA estimated the risk of stillbirth between 39–40 weeks' gestation to be approximately 1:1000 for women younger than 35 years of age, and approximately 2:1000 for women aged 40 and over.[4] This apparent doubling of risk for older mothers is echoed in the analysis of similar, albeit smaller, data sets from the UK and Australia.[5,6] This increased risk remains after adjusting for maternal comorbidities, parity and socioeconomic status.

Although stillbirths are often associated with known maternal risk factors, such as pre-eclampsia or diabetes, or fetal risk factors, such as intrauterine growth restriction, many stillbirths are unexplained and cannot be clearly predicted by enhanced antepartum fetal monitoring. Nevertheless, older mothers should have their medical and obstetric history carefully reviewed for the presence of additional risk factors that may influence their decision for active or expectant management in late pregnancy.

Both a meta-analysis of randomised trials and a retrospective cohort study of over one million pregnancies have suggested that labour induction from 37 weeks gestation may reduce the rate of caesarean section by around 15–20 per cent, albeit with an associated increase in neonatal unit admissions.[7,8] These data are generally not stratified by maternal age and, although the reduction in operative delivery appears to benefit women of all ages, older parturients are known to have a higher rate of intrapartum operative delivery in general; the benefit (or harm) in terms of operative delivery following labour induction has not been specifically evaluated in older mothers.

Nevertheless, based on the available epidemiological data, authors of RCOG's Scientific Impact Paper – titled Induction of labour in older mothers – have calculated that induction of labour at 39 weeks for women aged 40 and older would prevent stillbirth, with a number needed to treat (NNT) of 550.[3] This is a similar NNT for labour induction to prevent one stillbirth after 41 weeks in mothers aged in their mid-20s (a commonly accepted practice).

Thus, it seems reasonable to inform an older woman that labour induction at 39 weeks will reduce her risk of stillbirth, albeit many women will undergo labour induction to prevent a single stillbirth. Moreover, the decision to induce labour may have implications for the woman's birth experience. Mobility during labour may be reduced, owing to the need for intravenous cannulation and continuous electronic fetal monitoring. Labour progress may require more intensive monitoring, and so the patient may require more internal vaginal examinations. Her risk of operative delivery, however, may be reduced. There are inadequate studies evaluating the effect of labour induction on analgesia requirements, or maternal satisfaction with labour and its management.

On the other hand, it may be discussed that expectant management will give the woman a higher chance of spontaneous labour onset. She may be less likely to require continuous fetal monitoring or intravenous access during her labour; both of these may enhance her intrapartum mobility. However, in addition to the slightly increased risk of stillbirth, the expectant approach may

eventually result in prolonged pregnancy (beyond 41 weeks) and ultimately require labour induction for prevention of post-term pregnancy. Additionally, the mobility-restricting effects of continuous electronic fetal monitoring and intravenous access may still be required for other circumstances, based on her particular risk assessment.

In summary, older maternal age is an independent risk factor for stillbirth in late pregnancy, particularly over the age of 40. The absolute risk of stillbirth remains low, however, across all maternal ages. Older mothers should have these risks discussed and put into perspective and context, and may reasonably be offered elective delivery after 39 completed weeks of gestation, or ongoing expectant management, with an aim for spontaneous labour onset (or labour induction to prevent post-term pregnancy). Labour induction should be offered with a discussion about the potential implications for intrapartum monitoring, maternal mobility, and use of oxytocin and possible risks of overstimulation. Expectant management should be offered with an agreed plan for ongoing fetal monitoring, but with the acknowledgement that no level of antepartum fetal monitoring has been proven to predict or reduce the risk of stillbirth.

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Nutrition advice: can we provide it?

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Should O&Gs give nutrition advice to their patients? Certainly, patients expect to get dietary advice from doctors, along with help to set realistic weight goals and to obtain exercise recommendations.[1]

The Australian Medical Association's (AMA) Position Statement on Obesity suggests that doctors should give nutrition advice.[2] It states that medical practitioners have a particular role to play in prevention and early intervention strategies. In particular, the AMA statement suggests that dietary education should be a standard component of all antenatal care and advocates that nutritional literacy needs to be increased during and after pregnancy.

Practising members and Fellows of RANZCOG deal not only with pregnant patients, but also women diagnosed with gestational diabetes, polycystic ovary syndrome (PCOS), infertility and recurring miscarriage. All of these women may benefit from discussion of nutrition. However, RANZCOG recommends referral to dieticians or other 'appropriately trained professionals' when we are faced with patients with nutrition requirements.[3] Referral to a dietician is also suggested by many patient advocate groups and guideline developers.[4,5] Are Australian medical practitioners, including O&Gs, not considered 'appropriately trained professionals' in the context of nutrition? Could it be construed that O&Gs who give nutrition advice are practising outside their scope of practice and potentially face investigation and discipline from Medical Boards/AHPRA?

Evidence-based practice

The three pillars of evidence-based practice are the integration of a doctor's expertise with a patient's values and preferences, and the judicious use of the best-available evidence. The aim of this article is to address the question of whether O&Gs have the training and knowledge (expertise) to give nutrition advice; and what is the 'best available evidence' in regards to nutrition?

Do O&Gs have the expertise to give nutrition advice?

RANZCOG (C-Gen 19 2.1 a.1)[6] states that a Fellow should have various attributes, including the ability to provide 'independent management of the medical and clinical conditions within both the common and selected scope of practice'. Surely this applies to all management options, including nutrition advice, for patients with PCOS, gestational diabetes and obesity (in as much as obesity is associated with obstetric and gynaecologic conditions).

Through the intensive study of biochemistry, physiology, pathology and the pathophysiology of disease, all doctors obtain a solid foundation in nutrition and its effects on the human body. After some years in practice, doctors gain enormous experience dealing with various disease states and the contribution of diet to prevention and treatment.

In addition, doctors' knowledge of nutrition is influenced by personal study of textbooks and literature searches, scientific meetings and from college or society statements and guidelines, and during continuing medical education programs.

As a consequence, it would appear that doctors are uniquely qualified to give nutrition information to patients. Is an O&G specialist any less capable of providing basic nutritional information to his or her patients than before specialisation?

Best-available evidence

The prevailing view of the establishment is reflected in the NHMRC Australian Dietary Guidelines (ADG2013).[7] Several Australian organisations recommend following the ADG2013, including the Royal Australian College of General Practitioners, the Dietitians Association of Australia, Diabetes Australia, diabetic educators, endocrinologists and cardiologists. The guidelines are written for the population in general and are not meant to give guidance for those with problems such as gestational diabetes and PCOS.[7]

The academic team who searched the literature for 'best evidence' for the ADG2013 clearly recognised that the preponderance of nutrition research is from observational studies rather than level one and two studies.[8] Observation studies, as we know, do not confirm causation. It is difficult to attribute the occurrence of a chronic disease to any single food or nutrient item and, consequently, any observed relationship between a food or nutrient item and chronic disease must be interpreted with care and replicated in multiple studies.[9] Despite this, the ADG2013 clearly advocates low intake of fat, in particular saturated fats, and advocates multiple servings of carbohydrates per day.

While it appears that there is a degree of consensus on what is the best evidence, support for national dietary guidelines, including ADG2013, is far from unanimous. Increasingly, there are articles questioning long-held beliefs, in particular in relation to the macronutrient (protein, fat, carbohydrate) percentages in the diet. There is major dissent about whether our diet should be composed of lower or higher carbohydrate, and lower or higher fat content, especially saturated fats.

In 2015, the *British Medical Journal* commissioned and published a feature article relating to the development of the US dietary guidelines.[10] The author questioned

the scientific basis of the guidelines and highlighted multiple examples of omissions and inadequate search of the literature by the guideline committee. This provocative article attracted considerable commentary and resulted in a US Senate Enquiry into guideline development, impartiality of the committee and the robustness of evidence used to inform the guidelines.[11]

Recently, groups of concerned doctors and other health professionals in the USA,[12] UK[13] and Canada,[14] have petitioned their respective governments to urgently amend their national dietary guidelines to reflect up-to-date evidence, and where the evidence is weak, to expedite appropriate research.

The task of determining what is the best available nutrition evidence has been complicated by claims that clinical research is less than perfect,[15,16,17] and that evidence-based medicine has been hijacked[18] and is in crisis.[19] There are several books written by a variety of authors, including cardiologists, nephrologists, neurologists, generalists and science research reporters, with in-depth analyses of the problems with present dietary guidelines. There is a tendency to assume these authors are not using evidence-based medicine and that their aim is merely to generate revenue.[2] This attitude seems unwarranted given the low level of evidence supporting the ADG2013.[8]

Recently, a systematic review and meta-analysis of randomised controlled trials added to the growing literature suggesting 'that currently available randomised controlled evidence does not support the current dietary fat guidelines'.[20]

Moreover, in a further challenge to the present dietary guidelines paradigm, the Medical Director from the Joslin Diabetes Centre, Boston, proposes that it is time for a dietary revolution and he envisages 'the end of the high-carbohydrates era for diabetes prevention and management'.[21]

Also, Feinman et al have called for dietary carbohydrate restriction to be the first approach in diabetes management.[22] They give 12 points of evidence for the use of low carbohydrate diets. From an Australian doctor's point of view, nutrition research should be considered a complex 'work in progress'.

The medical profession and nutrition advice

Our patients expect us to include dietary advice in the management of their health.[1] However, it appears that the medical profession has delegated nutrition advice to dieticians, nutritionists and diabetic educators. Given the importance of nutrition to health, the profession should strive to reclaim and protect the central role of doctors in discussing and advising patients regarding nutrition in their overall care. Medical schools and the various specialty colleges have a responsibility to increase emphasis on nutrition knowledge from the biochemistry, physiology and pathology sciences, in undergraduate and postgraduate education, including at annual scientific meetings. This should

Should O&Gs be any different to general practitioners in their ability to offer nutrition advice to patients?
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include exploring the knowledge from, and analysis of, nutrition research, the quality and practicality of alternative views, and an understanding of the complex web of vested interests wishing to influence nutrition policy.

O&Gs and nutrition advice

What are we as O&Gs to do? O&Gs who delegate their role regarding dietary advice for their patients are disregarding the fact that nutrition is recognised as a major modifiable factor for the prevention and management of patients with obesity, PCOS and gestational diabetes. Nutrition advice should be a fundamental component of care for our patients.

Some O&Gs will be comfortable with referral to dieticians or personally recommending adherence to the ADG2013. The 'eat for health during pregnancy'[23] colour brochure is easy to follow and can be printed for patients. This guideline promotes a diet of low-fat and high-carbohydrate food. While this may be acceptable for non-obese patients, the promotion of high carbohydrate intake for gestational diabetes and women with insulin resistance is contentious, as referred to above.

For those O&Gs who are persuaded by the failure of national dietary guidelines to halt the progress of obesity and diabetes, the knowledge that large and expensive trials have failed to show significant advantage for the low-fat diets, and the strength of recent evidence, it is inappropriate to continue to refer to dieticians and diabetic educators who adhere to the ADG2013. Indeed, a recent study in England shows inconsistent nutrition advice from dieticians.[24] An in-depth analysis of this article is worth reading.[25] Advice to follow a low-carbohydrate, healthy-fat, nutrient-dense, real-food diet is at least an acceptable strategy to advise our patients.

The right of doctors, including O&Gs, to give nutrition advice to patients must be advocated and protected. I feel it is incumbent on RANZCOG to clearly state that it is within their scope of practice for O&Gs to give nutrition advice to their patients. In addition, it should be considered acceptable for information regarding nutrition to be given that may be outside ADG2013, but is supported by more recent evidence.

Conclusion

Good nutrition is important for general health and the prevention or amelioration of obesity and many chronic diseases. The medical profession should reclaim its central role in all aspects of patient care and must regard nutrition advice as a central component of care. This is what our patients expect.

O&Gs have the training, experience and expertise to consider giving basic nutrition advice to their patients. O&Gs should adhere to the triad of 'evidence-based practice' by using their expertise, the values and preferences of their patients and the judicious use of nutrition evidence. At present, deciding what is the 'best-available evidence' from the clinical research in nutrition is contentious. The evidence, such as it is, should be limited to assisting the clinical decision-making, rather than overriding it.

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Applications For Subspecialty Training Positions

Applications for the Subspecialties National Selection Process 2017 (2018 entry) opened on 1 December 2016, and close on 31 March 2017.

Applications are invited, through the National Selection Process, from prospective trainees for the RANZCOG subspecialty training programs, which lead to certification in one of the five subspecialties – Gynaecological Oncology (CGO), Obstetrical & Gynaecological Ultrasound (COGU), Maternal Fetal Medicine (CMFM), Reproductive Endocrinology and Infertility (CREI) and Urogynaecology (CU).

- The Subspecialties National Selection Process is a competitive process that determines eligibility to commence subspecialty training, but does not guarantee a training position.
- The regulations pertaining to eligibility to apply for and eligibility to commence subspecialty training are found in the RANZCOG Regulations Section D: Subspecialty Training available on the College website. It is expected that applicants will ensure they meet eligibility criteria before applying.
- Shortlisting and interviews are conducted by a panel comprising the Chair of the relevant Subspecialty Committee and a further two subspecialists.

All applications must be submitted using the National Selection Process 2017 application form available on the College website:
www.ranzcog.edu.au/Training/Subspecialist-Training/Apply/National-Selection

PLEASE NOTE
Applicants are required to provide details of three referees. The three referees must be

- A senior colleague (FRANZCOG) with whom you have worked within the previous two years. Applicants who are currently in the FRANZCOG training program must nominate their current Training Supervisor as the senior colleague.
- Two other colleagues with whom the applicant has worked within the last two years.
- A reference from a subspecialist in the subspecialty you are applying for would be highly regarded.

Please email your completed application form to the Chair of the relevant Subspecialty Committee subspecialties@ranzcog.edu.au

For further information about these positions please contact Georgina Sack: gsack@ranzcog.edu.au or by phone: +61 3 9412 2941

Further information about the subspecialty training programs can be viewed on the College website:
www.ranzcog.edu.au/Training/Subspecialist-Training/Apply/National-Selection

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Case reports

Fibroid uterus: an unusual cause of intraperitoneal haemorrhage

Dr Shveta Kapoor
RANZCOG Advanced trainee

A 46-year-old multiparous woman presented to the emergency department of a large metropolitan hospital that did not have an onsite gynaecology service. She was known to have a fibroid uterus and presented with severe abdominal pain. She was of Vietnamese ethnicity and spoke limited English. On examination, she was found to be pale and hypotensive, with a blood pressure of 60/40mmHg. Her abdomen was distended and generally tender. Resuscitative measures were instituted and a bedside scan was performed, which showed free fluid in the abdomen.

An urgent computed tomography (CT) scan of her abdomen and pelvis confirmed free fluid in all four quadrants, consistent with haemoperitoneum (Figures 1a and b). The known fibroid uterus was noted to have increased in size from 80mm (anterior-posterior) x81mm (transverse) x90mm (craniocaudal) a year ago, to 120x96x160mm. Her initial haemoglobin came back at 90g/dl and she was transfused two units of packed red cells.

In view of her hypotensive status, with suspected continuing intra-abdominal bleeding, the on-call gynaecology team from a linked hospital was called in. A midline laparotomy was performed that revealed approximately one litre haemoperitoneum and a 20-week-size fibroid uterus. The source of bleeding was found to be a centimetre-long tear in the uterine serosa at the fundus, with surrounding ectatic blood vessels (Figure 2). A total abdominal hysterectomy was performed without event. Postoperatively, haemoglobin was found to have dropped to 66gm/dl and another two units of packed red cells were transfused. She recovered well and was discharged home on the fourth postoperative day.

At gross pathological examination, a large fibroid uterus measuring 100mm anterior-posterior, 93mm transverse, 166mm cranio-caudal and weighing 921g was noted. Histopathological examination reported moderate adenomyosis and multiple fibroids, with no features of malignancy.

Discussion

Fibroids are the most common tumours in women.[1] However, they are rarely associated with acute life-threatening complications. Haemoperitoneum due to spontaneous bleeding from a fibroid uterus is exceedingly rare with fewer than 100 cases reported in the literature.[2]

The acute abdomen in a woman with known fibroids raises the possibility of torsion of a pedunculated subserosal fibroid, red degeneration, sarcomatous change or acute

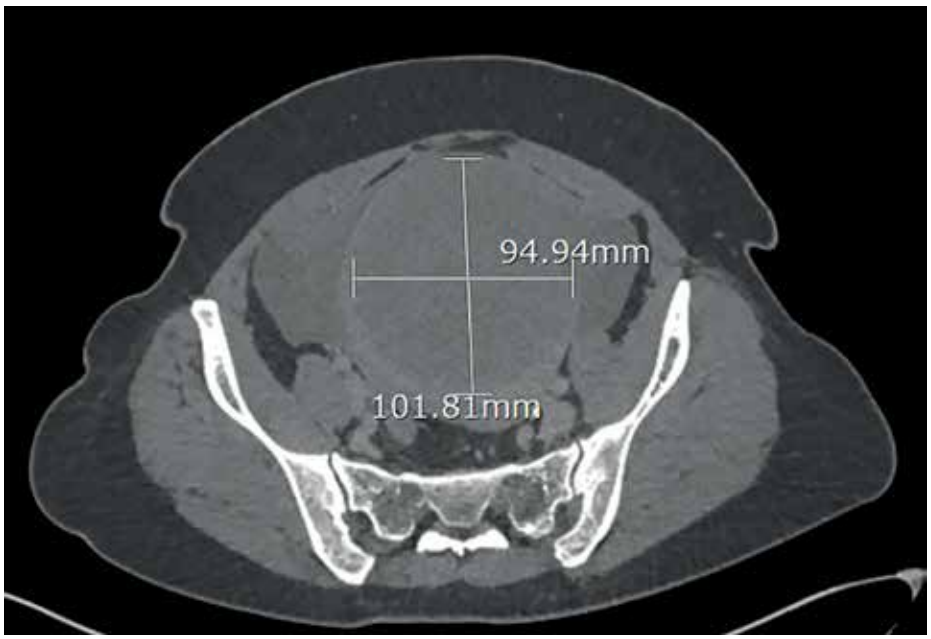

Figure 1a. CT scan. Enlarged fibroid uterus and haemoperitoneum concentrated around the uterus.

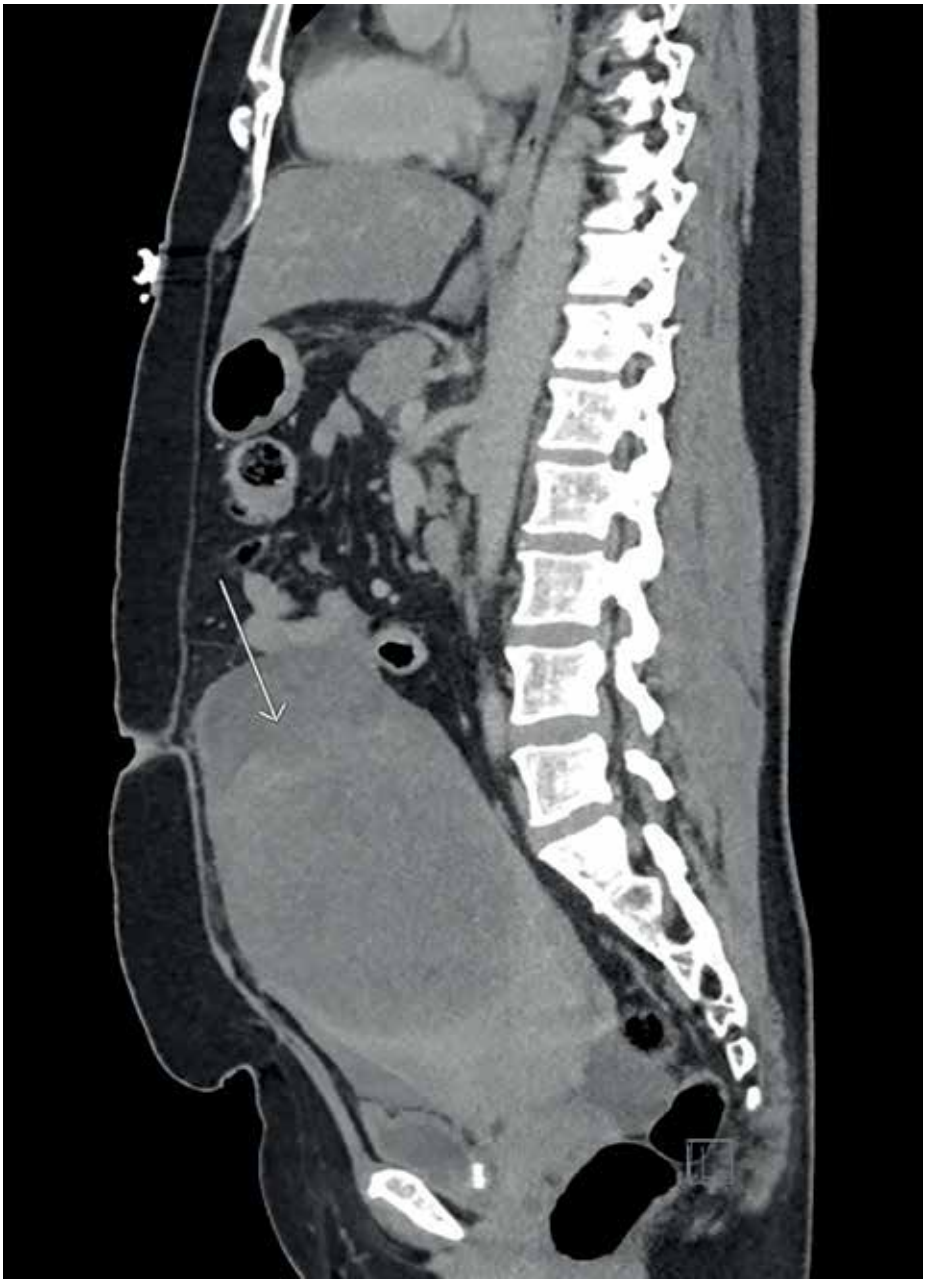

Figure 1b. CT scan. Enlarged fibroid uterus..

haemorrhage. Rupture of, or haemorrhage from, an ovarian cyst or adnexal torsion needs to be considered. A ruptured ectopic pregnancy is the most important differential in any woman of childbearing age and needs exclusion.

In this case, a CT scan confirmed a large haemoperitoneum and suspected haemorrhage from the fibroid uterus as blood seemed to be concentrated around the uterus. No evidence of active bleeding was evident on CT scan, despite use of multiphased intravenous contrast.

The possibility of bleeding from sources outside the genital tract was taken into consideration while planning her laparotomy. Similar to previous reports, the source of bleeding in our patient was from blood vessels overlying the fibroid. It has been postulated that rupture of serosal veins over a fibroid uterus can occur due to increase in intra-abdominal pressure, rapid increase in size of fibroid or pelvic congestion due to menstruation or pregnancy.[2] Most reports of haemoperitoneum due to bleeding fibroid uterus are in women in the reproductive age group.[2]

Management considerations should include future fertility plans. Some cases have been successfully managed with myomectomy.[3] Uterine artery embolisation has also been used to avoid an emergency hysterectomy.[4] Where future childbearing is not a consideration or in case of a multi-fibroid uterus, hysterectomy is often the best option. Our decision to perform a total abdominal hysterectomy for our patient took into consideration her perimenopausal status and the possibility of a sarcomatous change in the fibroid.

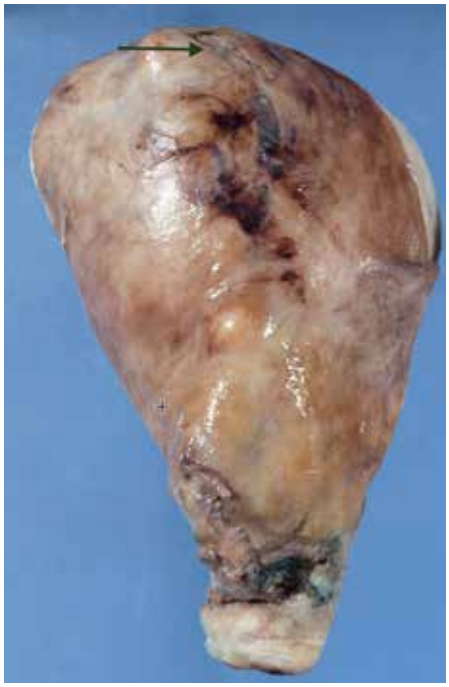

Figure 2. Gross pathology specimen of uterus with serosal tear at fundus.

Conclusion

In the practice of medicine, to be aware is to be prepared. This case highlights an uncommon, yet potentially catastrophic, complication of a common condition.

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Please note: there was an error in the Case report that appeared in the previous issue of O&G Magazine, Vol18; No4, p56. Figure 1 was incorrectly labelled as an MRI although the image showed a transvaginal ultrasound scan.

Vulvovaginal graft versus host disease and atrophy

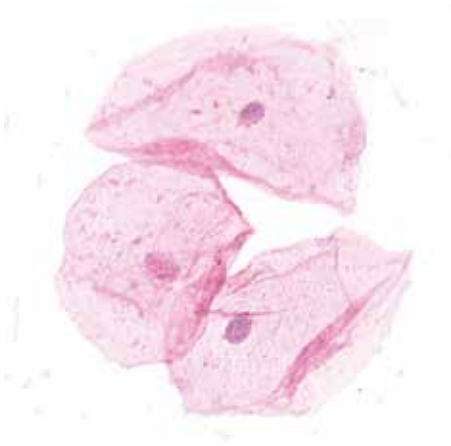

Figure 2. Vaginal smear 17 days after treatment showing resolution of vaginitis and epithelial maturity (Wright stain x 400).

Dr Graeme Dennerstein
FRCOG FRANZCOG

Dr James Scurry
MD FRCPA

The patient was a 36-year-old mother of two, referred in 2016 with a provisional diagnosis of genital graft versus host disease (GVHD). In 2004, four months after the birth of her youngest child, she developed myeloid leukaemia treated successfully with total body irradiation, chemotherapy and subsequent bone marrow transplant. The following year she developed vaginal soreness and fissuring precluding intercourse, which was diagnosed as GVHD. Treatment with vaginal oestrogen and the oral contraceptive pill was of little or no benefit. She appeared fit, with a good recovery and her only complaints apart from vaginal soreness are amenorrhoea, dry eyes, partial lung capacity and partial return of immunity.

Somewhat surprisingly, her vulva appeared normal, with evidence of fourchette fissuring only, and no apparent lichenoid dermatosis, the usual feature of GVHD.[1] She did, however, have a clinically apparent vaginitis with slight stenosis of the upper one-third of the vagina. Bimanual findings were normal.

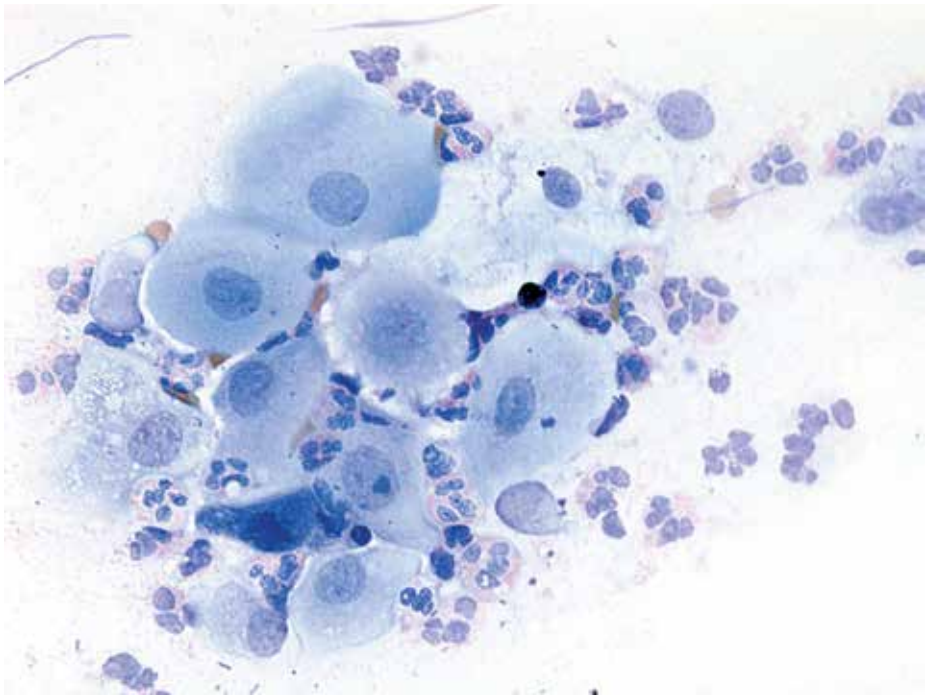

Figure 1. Vaginal smear at initial presentation showing severe vaginitis and parabasal cells (Wright stain x 400).

A stained smear from the vagina consisted mainly of inflammatory cells and parabasal cells, indicative of severe atrophic and/or erosive vaginitis (Figure 1). Her serum oestradiol was unrecordable and her follicle-stimulating hormone (FSH) was 184 IU/L.

She was commenced on oral oestradiol 2mg and medroxyprogesterone acetate 5mg daily and no topical treatment. At review 17 days later, there was relief of genital symptoms. A stained smear from the vagina this time revealed resolution of the vaginitis and consisted almost totally of healthy superficial and intermediate squamous cells (Figure 2).

We present a case with a provisional diagnosis of GVHD with an excellent response to systemic oestrogen replacement. While the first smear findings could have been due to atrophy and/or vaginitis (erosive/autoimmune), her vaginitis and stenosis were typical signs of GVHD and her marked improvement with oestrogen alone suggested lack of oestrogen was her main problem. Her subsequent progress, however, confirmed GVHD was also present.

Oestrogen improves symptoms in vaginal GVHD[1] and not all patients with vulvovaginal GVDH require immunosuppresive therapy. Treatment with oestrogen replacement alone at an optimal dosage avoids the increased risk of local infectious complications, especially fungal infections, that may follow topical steroids. One mechanism for the improvement with oestrogen is its influence on the regulation

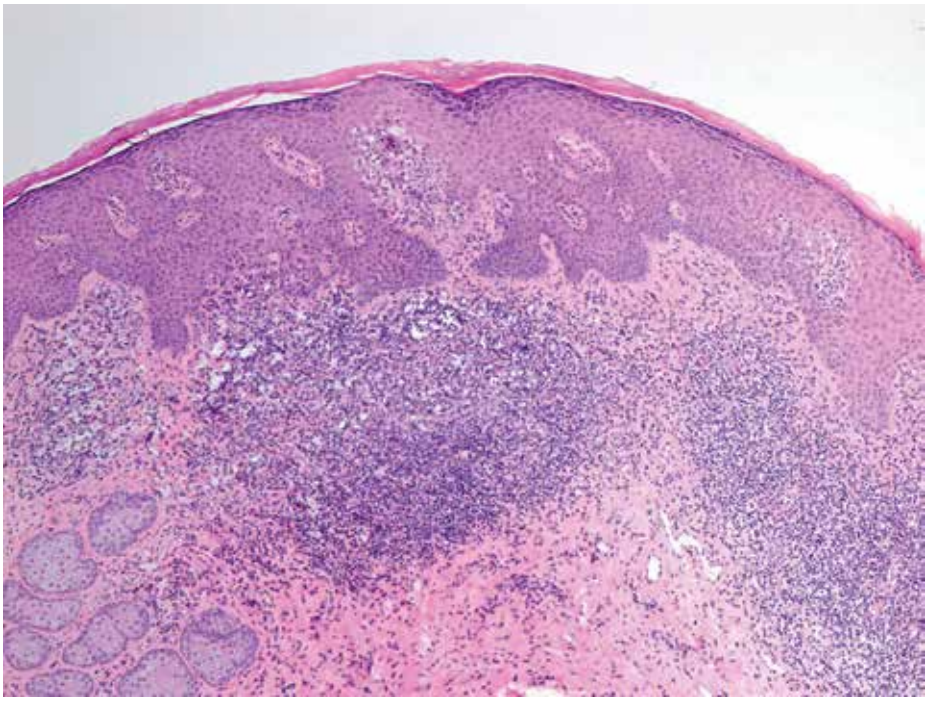

Figure 3. Subsequent biopsy interlabial sulcus.

of the immune system of the lower female genital tract.[2] Despite her improvement with oestrogen alone, the patient remains under close surveillance in case of relapse of her GVHD, as prompt diagnosis and appropriate therapy may prevent the development of severe forms of GVHD and the need for surgery.

The treatment of vaginal atrophy is somewhat controversial.[3,4] It is almost always due to oestrogen lack and replacement of oestrogen is the usual treatment. One author (GD) has a strong preference for systemic oestrogen replacement[5] because of complications of vaginal oestrogen, including dosage difficulties and their consequences and contact dermatitis from prolonged usage. Furthermore, the woman relying on topical replacement misses out on the benefits of systemic menopausal hormone therapy (MHT), such as the prevention of osteoporosis as well as relief of any other menopausal symptoms. This case lends further weight to the contention that the best treatment for atrophic vaginitis is systemic oestradiol, which can be monitored if necessary with a serum oestradiol and FSH. A serum oestradiol over 150pmol/L guarantees vaginal oestrogenisation.[5]

Follow up

The patient returned 20 weeks after the initial consultation, still taking MHT, complaining of a sensation of dryness and 'splitting' affecting the vulva. Examination revealed minimal inflammatory changes only, but in view of the complexity of the case, a biopsy was taken from the interlabial sulcus from where most of her discomfort arose. The histology (Figures 3 and 4) was indicative of GVHD with the characteristic 'lichenoid' features. She was rendered free of symptoms and signs with topical 1% hydrocortisone.

The management of this rather complex case was expedited by the use of office microscopy by one of the authors (GD) and adds support for the ongoing teaching of this technique, particularly to those with a special interest in vulvovaginal disorders.[6]

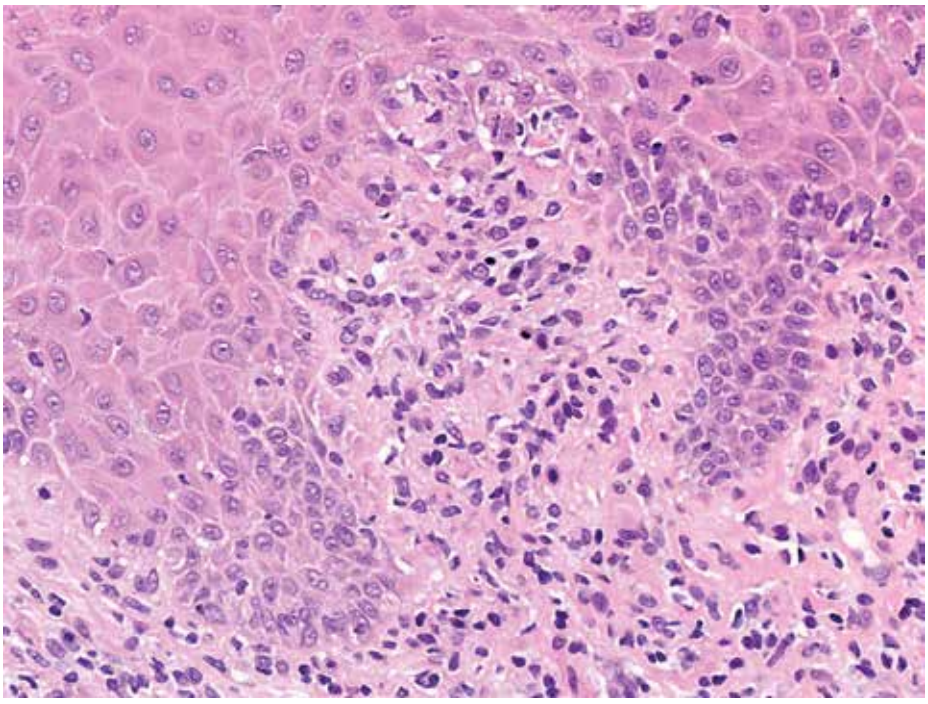

Figure 4. Subsequent biopsy interlabial sulcus.

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COLP
Colposcopy Online Learning Program

UPDATES TO THE COLPOSCOPY ONLINE LEARNING PROGRAM

The Colposcopy Online Learning Program (COLP) has been updated to align with the renewed National Cervical Screening Program (NCSP) policy and Guidelines for the Management of Screen Detected Abnormalities, Screening in Specific Populations and Investigation of Abnormal Vaginal Bleeding (2016 Guidelines). It will re-launch at the end of March 2017.

The COLP

- is a comprehensive theoretical online education program for professionals performing colposcopy
- is freely available to all those participating in the Cervical Quality Improvement Program (C-QuIP), or for anyone with an interest in colposcopy
- includes pre and post tests for each topic
- includes reference material
- includes accompanying images and diagrams
- provides interactive learning

The revised COLP topics are:

1. The natural history of Human Papilloma Virus (HPV) infection and its relation to cervical neoplasia
2. The National Cervical Screening Program and risk-based screening
3. Management Principle of the Woman with an Abnormal Cervical Screening Result
4. The Fundamentals & Practice of Colposcopy
5. The Treatment of Pre-invasive Disease and its Complications

RANZCOG Fellows can claim 5 CPD, PAR points in the Self-education component of the Clinical Expertise or Academic Abilities domain for completion of the COLP.

For further information, please contact: cquip@ranzcog.edu.au

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Renewal of the National Cervical Screening Program

Prof Ian Hammond
MBBS, FRCOG, FRANZCOG, CGO (Emeritus)

The renewed National Cervical Screening Program (NCSP) will commence on 1 May 2017, when the primary human papillomavirus (HPV) screening test will become available on the Medicare Benefits Schedule (MBS).

The following answers to frequently asked questions provide information regarding the roll-out of the renewed NSCP, along with links to implementation resources.

What is changing under the renewed NCSP?

- The renewed NCSP will invite women aged 25–74 years, both HPV vaccinated and unvaccinated, to undertake a HPV test with partial genotyping and reflex liquid-based cytology every five years.
- Women of any age who have symptoms suggestive of cervical cancer such as abnormal vaginal bleeding, should have appropriate clinical assessment, which should include a co-test (HPV and LBC test).
- HPV-vaccinated women will still require cervical screening as the HPV vaccine does not protect against all the types of HPV that cause cervical cancer.
- The Register is being established to improve data collection to support the new screening program. The Register will provide national digital health infrastructure for the collection, storage, analysis and reporting of screening data and it will also send invitations and follow-up reminders to patients to participate in the screening program.
- It will be mandatory (through national legislation) for all colposcopists to provide the Register with data in accordance with a minimum dataset for every diagnostic and therapeutic interaction. There is preference for electronic reporting to the Register, but there will be provision for paper-based reporting.
- The quality of colposcopic and therapeutic assessment procedures will be regularly assessed. The Department of Health expects all colposcopists (diagnostic and therapeutic) who provide services to the NCSP to participate in a quality-assurance program. Participation in the RANZCOG Cervical Quality Improvement Program (C-QuIP) should meet that expectation.
- The MBS item number for colposcopy 35614 remains. The Department of Health are currently finalising the MBS item descriptors and fees to support the renewed NCSP.

What should I do up until 1 May 2017?

In the interim, it is very important that women continue to participate in the current two-yearly Pap test program to ensure they are not at risk of developing cervical cancer.

Why are women under 25 years of age not being screened as part of the NCSP?

- Evidence shows that cervical cancer in young women is rare.
- There is robust evidence to show that screening women younger than 25 years has not measurably changed the incidence or mortality of cervical cancer in this age group.
- HPV infections are very common in young women, are mostly transient and will usually resolve within 1–2 years.
- Significant harms of screening this age group include over-diagnosis, increased stress and anxiety associated with additional tests, unnecessary colposcopy and related treatment that is associated with a heightened risk of future preterm births.
- HPV vaccination has already been shown to reduce high-grade cervical abnormalities among women younger than 25 years of age and will continue to reduce the risk of cervical abnormalities in this age group.
- When the clinician is concerned regarding early age of sexual activity (less than 14 years of age) or sexual abuse, women between 20–25 years may undertake screening.
- This decision not to screen women under 25 is in line with recommendations from International Agency for Research in Cancer that the harms of screening outweigh the benefits in this age group.

When should I advise my patients to cease cervical screening?

- It is recommended that women between 70–74 years of age who have had a regular screening tests have an exit test before leaving the cervical screening program.
- Women older than 69 years who have never been screened or have not had regular screening tests should have a HPV test if they request screening.

Where can I access the updated Guidelines for the management of screen-detected abnormalities?

Cancer Council Australia has finalised the clinical management guidelines for the renewed NCSP Guidelines for the Management of Screen Detected Abnormalities, Screening in Specific Populations and Investigation of Abnormal Vaginal Bleeding – 2016 Guidelines. The Guidelines will be released publicly in February 2017 on Cancer Council Australia's interactive wiki platform, which will allow them to be updated as new evidence becomes available. They will also be available as a PDF.

What is the new National Cancer Screening Register?

The Commonwealth Department of Health has appointed Telstra Health to develop and operate the new Register, which will support the renewed NCSP and the expansion of the National Bowel Cancer Screening Program. The Register will create

a single record for Australians participating in cervical cancer screening, meaning for the first time, one record for each woman. By integrating the Register with GPs' desktops, GPs will be able to identify patients' screening eligibility and history to support real time clinical decision-making. All health professionals, including pathology providers, will have improved access to their patients' information through the Register.

The Register will be established under national legislation and the data included in the register will be owned by the Commonwealth Department of Health and cannot be used for any other purpose. Any misuse of data could be an offence under the Criminal Code. All data is subject to privacy laws such that only personal information that is directly related to the Register may be collected, used and disclosed.

How does the Register affect my practice?

The National Cancer Screening Register Bill 2016 and the National Cancer Screening Register (Consequential and Transitional Provisions) Bill 2016 were passed in October 2016. These Bills mandated the reporting of pathology results to the register as well as colposcopy outcomes.

It will be mandatory (through national legislation) for all colposcopists to provide the Register with data in accordance with a minimum data set for every diagnostic and therapeutic interaction. There is a preference for electronic reporting to the Register, but there will be provision for paper-based reporting.

The quality of colposcopic and therapeutic assessment procedures will be regularly assessed. The Department of Health expects all colposcopists (diagnostic and therapeutic) who provide services to the NCSP to participate in a quality assurance program. Participation in C-QuIP should meet that expectation.

The Department of Health is currently finalising the MBS item descriptors and fees to support the renewed NCSP.

I've heard that patients can opt into self-collection: what does this mean?

International studies show that HPV self-sampling increases screening participation rate for under-screeners and those that have never been screened. Self-collection will be an alternative only available to under-screeners or those that have never been screened. HPV self-collection is not as effective as a health professional collected sample, but it is more effective than the current Pap test or no testing at all. Self-collection is less cost effective than the mainstream pathway and will not be broadly encouraged. It is expected to be an important opportunity to increase screening rates in women from rural and remote areas and Aboriginal and Torres Strait Islander women. If self-collection returns a HPV-positive test, a cervical sample for liquid-based cytology must be collected.

Why is cervical cancer screening changing?

In Australia, Pap tests and an organised approach to screening have already halved the incidence and mortality of cervical cancer. While the success of the current NCSP cannot be disputed, the environment in which the program operates has changed. Therefore, in 2011, the Commonwealth Department of Health undertook a review of the cervical screening program (the Renewal).

The aim of the Renewal was to ensure that all Australian women, HPV vaccinated and unvaccinated, have access to a cervical screening program that is acceptable, effective, efficient and based on current evidence. To achieve this, the Department of Health:

- assessed the evidence for screening tests and pathways, the screening interval, age range and commencement for both HPV-vaccinated and non-vaccinated women
- determined a cost-effective screening pathway and program model
- investigated options for improved national data collection systems and registry functions to enable policy, planning, service delivery and quality management
- assessed the feasibility and acceptability of the renewed program for women.

Since the introduction of the NCSP in 1991, new evidence has emerged about the optimal screening age range and interval, the HPV vaccine has become available and there have been developments in new technologies for the early detection of cervical cancer.

How were the new recommendations developed?

- There was an assessment of evidence, modelling and evaluation of potential screening pathways, tests and intervals. Recommendations from these assessments were made by the Medical Services Advisory Committee (MSAC) in April 2014.
- The Australian Government provided funding to implement the renewed program based on MSAC's findings as part of their 2015–16 Commonwealth budget commitment.

Further reading

Medical Services Advisory Committee recommendations. [Accessed 2 September 2016] www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/MSAC-recommendations.
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Additional topics are continuing to be developed and will be published on the website as they become available.

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Excellence in Women's Health

The leg-up

The new column to keep you up-to-date with medicolegal issues in the practice of obstetrics and gynaecology.

Dr Nicole Woodrow
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Royal Women's Hospital, Melbourne, Womens's Ultrasound Melbourne (WUMe)

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Sunshine and Royal Women's Hospitals and Melbourne Mothers

Book Review
Scholarly Misconduct
Law, Regulation, and Practice
Ian Freckelton QC

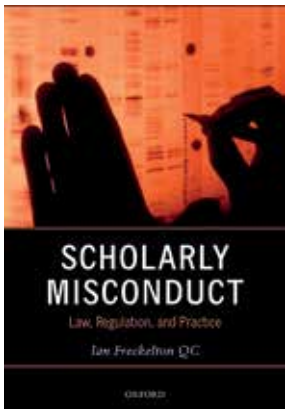
Scholarship lays the foundation for a successful career in obstetrics and gynaecology. It commences as a trainee, with the countless hours sifting through mountains of knowledge and personal opinion to search for 'the truth' at the pinnacle. It advances through to the difficult task of performing research oneself, with the push and pressure of publication for career advancement. Finally, as a consultant, the respect for scholarship behoves one to keep knowledge and teaching current. The reliance on our academic cousins to keep us up to date makes the book, 'Scholarly Misconduct', highly relevant to academics and clinicians alike. Ian Freckleton is a Queen's Counsel and one of Australia's foremost medicolegal minds. His new, monumental book is kindly compartmentalised for an enjoyable reading-romp through the world of 'sex, drugs, murder, corruption, fraud, nepotism, hoaxes, denigration, defamation and a host of other crimes and misdemeanours'.

Disciplinary proceedings contain rich material to pique the interest of obstetricians and gynaecologists. Cases presented include the 1995 episode of the British obstetrician Dr Malcolm Pearce who claimed to have implanted a five-week tubal ectopic pregnancy into the endometrial cavity resulting in the birth of a healthy neonate, publishing his innovative technique in the *British Journal of Obstetrics and Gynaecology*. The patient could not be found. This was because the case study was entirely false.

Dr Pearce published later in the same journal, fabricating a double-blind randomised controlled trial involving 191 women at high risk for miscarriage with the arms involving either HCG or placebo. His coauthor, Prof Geoffrey Chamberlain, the President of the Royal College of Obstetricians and editor of the College's journal, was embroiled in the scandal, admitting that his involvement was a 'gift authorship' and he had little involvement in the work.

Dr William McBride, was one of Australia's most awarded scholars, being internationally recognised for his discovery of the causative association between the morning sickness drug, thalidomide, and birth defects. He was Man of the Year and Australian of the Year in 1962, Commander of the Order of the British Empire in 1969, Father of the Year in 1972 and Officer of the Order of Australia in 1977. However, he had a spectacular fall from grace in 1993 when the Medical Tribunal of New South Wales removed him from the Medical Register due to fraudulent research on his hypothesis that another morning sickness drug, Debendox, was teratogenic. His actions were summarised by the Tribunal as to 'indicate a serious degree of intellectual and moral dishonesty'. This epic legal disciplinary case had multiple tangents including the fiery confrontation with a fellow researcher who exposed the scientific fraud, a public attack on the medical journalist Norman Swan and multiple submissions for readmission to the Medical Register, successful in conclusion to enable him to work in American Samoa as an O&G specialist. Freckleton wryly notes, 'Unfortunately, the effectiveness of the consequences as a deterrent to others minded to behave similarly is open to serious doubt.'

'Scholarly Misconduct' will take you out of your comfort zone, exposing the evils of research misconduct, conflicts of interest, plagiarism, dishonesty in employment, denigration, disputation and malicious harassment of colleagues, sexual misconduct and whistleblowing. The author's attempts to move past the blame on an individual's personal defects to reveal the systemic causes for cultures of misconduct are particularly enlightening and especially relevant to each of us.



Finally though, everyone loves a good story, and this book is a cracker of a read, full of forensic sagas with egotistical characters, dark plots and deceit.

'Freebirthing' Coronial Concerns

Inquest into the death of NA

NA was an infant born breech without medical or maternity assistance (in a so-called 'freebirth') who died within days of birth from hypoxic ischaemic encephalopathy. Pertinent findings for our Fellows from the Coroner's court can be summarised as:

1. There is a continued responsibility on all medical practitioners to attempt to discuss risks in pregnancy when any new information comes to light, despite patients already being aware of the risks. A general practitioner made multiple efforts to encourage the pregnant woman and her partner to attend regularly for antenatal care and cancel her homebirth. This included escalating concerns related to her Hepatitis C-positive status, iron-deficiency anaemia and transverse lie complicating the pregnancy. He also made a referral to the governmental Child Wellbeing Unit when she became uncontactable. The pregnant woman and her partner remained committed to a homebirth:

> In effect doctor and patient were operating with completely different world views and meaningful communication about the risks associated with the planned homebirth was difficult.

However, a covering general practitioner was singled out for criticism by the Coroner for not trying to seek further contact with the couple following an ultrasound at 38 weeks (8 weeks after the original referral was made) confirming the already known fact of the transverse lie:

> It is extremely unfortunate that once the final scan had been done, they were not warned again in the firmest terms, either by the GP practice they had attended or by a worker from Community Services. It is now impossible to know if F would have changed her mind had that extra warning taken place or if she and her husband would have chosen to proceed with their original plans regardless.

2. A major recommendation made by the Coroner was 'that the Royal Australian College of General Practitioners consider developing policy guidelines to assist and support its members in advising patients in relation to requests for nonhospital births. Consideration could be given to the 'National Midwifery Guidelines for Consultation and Referral'. The Coroner queried whether, had the pregnant woman been referred to a homebirthing option early on:

> ...before all the risks became clear, she may have benefited from contact with knowledgeable midwives and had the chance to have been advised of the risks she faced in the context of a stronger therapeutic relationship.

The Coroner made it clear that, nevertheless, all evidence pointed to a hospital birth as the safest option in this tragic scenario.

Sickly Sweet

***Australian Product Liability Reporter*, 2016/27**

For sugar, the times they are a changing

Mark Leersnyder, Dora Banyasz and Peter O'Donahoo

Obesity is one of the greatest causes of morbidity and mortality in the developed world, and obstetrics is no exception. Mark Leersnyder et al published an interesting article recently 'For sugar, the times they are a changing' in the *Australian Product Liability Reporter*. The article makes mention of the Global Report on Diabetes and discusses the regulatory measures imposed around the world to minimise sugar consumption. According to the *Global Report on Diabetes*, consumption of sugar and sugary drinks is a leading cause of excess body fat. In the USA, one of Michelle Obama's legacies will be the changes to the Nutrition Facts label, requiring the weight and percentage daily value for added sugars to be clearly on the label. In addition, for drinks that contain between one and two servings (for example, 590ml soft drink), the calories will now be marked for the entire container, as people usually consume them in one sitting. Nations such as the UK and Mexico have moved to impose a tax on sugary drinks. In Mexico, this policy has led to a 12 per cent reduction in the purchase of these beverages. Similar to smoking, there will always be a contingent of the population who will tolerate the increased cost for the psychological benefit of this legalised drug, for some would argue that sugar is an addiction. Perhaps poor nutritional knowledge is partially to blame. Many times in gestational diabetes clinic, the question arises as to whether juice is allowed; juice is the culprit that masquerades as a health-food item, all the while stacking on the calories.

Leersnyder et al make reference to some interesting numbers. Obesity costs Australia $3.8bn in direct costs. The School of Public Health at UQ estimates that a tax of 20 per cent on sugar beverages could save 1600 lives and raise $400m for new health initiatives.

Australia launched the voluntary 'Health Star Rating' system in June 2014, which will be in place for five years, with a review after two years. Aside from the rating system, Australian regulation has been disappointingly silent. As the article notes, there are laws in place to restrict advertising of unhealthy foods at the time of children's television programs; however, this is the extent of it. Some campaigners are calling for age-based sale restrictions of unhealthy food and beverage, similar to alcohol. Certainly, school canteens are now restricted and employ the 'traffic light' system to indicate the healthiness of available food. Many a parent has snuck into the pantry to consume an unhealthy treat away from the eyes of a demanding toddler who might want some. And perhaps therein lies the most powerful influence – the dietary intake of parents and the example that is then set.

As health professionals, it is difficult to have the obesity discussion with our patients even though it is often the root of all evil with regard to their other health issues. There are significant waiting lists for bariatric surgery, (if available at all) often up to two years or more. Clearly, any attempts that focus on treatment alone will be sorely inadequate; prevention is the key. Regulation is only one part of the puzzle, but it does raise awareness of the significant health issues caused by excess sugar intake.

Obstetrics and Gynaecology Senior Registrar position, Dili, Timor-Leste

An exciting opportunity exists for a Senior O&G Registrar to assist in training and mentoring staff and contribute to the obstetrics and gynaecology work of the national hospital in Dili, Timor-Leste.

Hospital Nacional Guido Valadares requires a suitably qualified medical practitioner to contribute to the training of Timorese doctors.

The assignment requires a minimum six-month commitment and the starting date is negotiable. The position may be of interest to a FRANZCOG trainee, holding current registration with the Medical Board of Australia. Interested trainees should discuss prospective approval with their regional training coordinator. The successful applicant will need to be resilient, resourceful and have realistic expectations about management in a low-resource environment. The position is supported by a qualified visiting Obstetrician/Gynaecologist (non-FRANZCOG) currently acting as consultant with the RACS Australia Timor-Leste Program of Assistance for Secondary Services (ATLASS II).

This assignment is part of the Australian Volunteers for International Development (AVID) program, which supports ATLASS II. Volunteers receive airfares, allowances, in-country support and insurance cover. To obtain the job description, please visit https://avid.avi.org.au/opportunities/10534793/ or contact Sean Lynch at AVI slynch@avi.org.au or Kate Moss, Timor Leste Country Manager, RACS Global Health kate.moss@surgeons.org.

Closing date for applications: 21 March 2017.

For information on working conditions at HNGV it is strongly recommended that interested practitioners contact Dr Skanda Jayaratnam skanda.jayaratnam@gmail.com or Dr Alexis Shub ashub@internode.on.net.

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
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Journal Club

Had time to read the latest journals? Catch up on some recent research by reading these mini-reviews by Dr Brett Daniels.

Treatment of cholestasis of pregnancy

Pruritus is encountered in many pregnancies. When a rash is present, a common diagnosis is pruritic urticarial papule and plaques of pregnancy (PUPPS), without a rash, intrahepatic cholestasis should be considered. Intrahepatic cholestasis occurs in about 1 per cent of pregnancies, generally developing in the late second or third trimesters, and is characterised by intense itching without rash, often on the palms of the hands and soles of the feet; deranged liver enzymes, including the transaminases; and increased serum bile acids. In addition to maternal discomfort from severe itching, cholestasis of pregnancy increases the risk of premature delivery, meconium-stained liquor and fetal demise.[1] The physiological basis of obstetric cholestasis is unclear, but it is thought that pregnancy hormones and their metabolites may, in genetically susceptible women, result in cholestasis through mechanisms including reduced uptake of bile acids by hepatocytes.

Pharmacological treatment of cholestasis of pregnancy currently includes the use of ursodeoxycholic acid (UDCA) and/or S-adenosylmethionine (SAMe). UDCA is a hydrophilic bile acid that detoxifies hydrophobic bile acids, preventing injury to the bile ducts. SAMe is involved in the synthesis of phosphatidylcholine and influences the composition and fluidity of hepatocyte plasma membranes and the biliary excretion of hormone metabolites. Previous observational and clinical studies have shown that UDCA and SAMe can reduce pruritus and improve liver function indices and perinatal outcomes.[1] A recent meta-analysis included five randomised controlled trials of the effect of UDCA, SAMe or a combination of both on maternal, clinical and biochemical responses, including pruritus scores, total bile acids and liver function tests. Obstetric outcomes, including preterm delivery, caesarean section and meconium-stained liquor, were also analysed. The results indicated that UDCA was more effective than SAMe in reducing pruritus and the levels of total bile acids and ALT. Treatment with UDCA was also associated with significantly lower preterm delivery rates than treatment with SAMe. Interestingly, combination therapy with both agents significantly reduced total bilirubin, AST, and the rate of preterm delivery in comparison with either drug administered alone, although not for other parameters.[1] The authors suggest that UDCA is more effective than SAMe monotherapy and should be the first-line treatment for obstetric cholestasis, although there is some evidence for considering combination therapy. While UDCA is the main pharmacological therapy for obstetric cholestasis a recent case report raises the possibility of metformin as an additional treatment option. In this case, a woman affected with obstetric cholestasis in four previous pregnancies was treated with metformin for gestational diabetes in her fifth pregnancy, with the observation that her bile acids and liver enzymes were improved in comparison with her previous pregnancies.[2]

1. Zhang Y, Lu L, Victor DW, Xin Y, Xuan S. Ursodeoxycholic Acid and S-adenosylmethionine for the Treatment of Intrahepatic Cholestasis of Pregnancy: A Meta-analysis. *Hepatitis Monthly*. 2016;16(8):e38558. doi:10.5812/hepatmon.38558.
2. Elfituri A, Ali A, Shehata H. Managing Recurring Obstetric Cholestasis with Metformin. *Obstet Gynecol*. 2016;128(6):1320-23.

Radio frequency ablation for fibroids

Uterine fibroids are very common and present in over 60 per cent of women by the age of 50. Treatments include medical therapy and procedural methods, such as hysterectomy, myomectomy and uterine artery embolisation. The authors of this review assert that the current techniques may not be accessible, effective or acceptable for all women and propose laparoscopic radio frequency ablation (RFA) as a minimally invasive option for treatment of fibroids. RFA applies an alternating current in the range of 300–500kHz directly into the fibroid tissue via electrodes. This current causes an increase in temperature that destroys the myoma cells. With current equipment, ablation of fibroids of up to 7cm has been reported. The authors report using a laparoscopic RFA probe inserted into the myoma under both laparoscopic vision and ultrasound control and report 15 pregnancies and 13 live births following RFA ablation of fibroids in their series. The authors further describe a number of previous studies reporting encouraging results with RFA in terms of reduction in uterine volume, bleeding as well as improved quality of life and acceptability of the treatment to the patients. While RFA for fibroids remains an uncommon treatment in Australia and New Zealand, this article provides an up-to-date summary of the technology and previous research in this area.

1. Lee BB, Yu SP. Radiofrequency Ablation of Uterine Fibroids: a Review. *Current Obstetrics and Gynecology Reports*. 2016;5(4):318-324. doi:10.1007/s13669-016-0183-x.

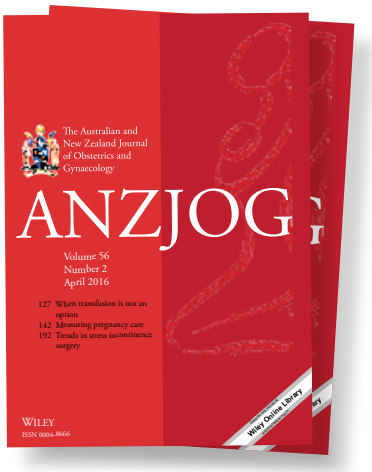
Statement from the Editorial Board: The objectives of ANZJOG July 2016

The Australian and New Zealand Journal of Obstetrics and Gynaecology

ANZJOG

- We intend that ANZJOG will be a high quality academic journal with the main objective of publishing original research from both established and emerging researchers working in obstetrics, gynaecology and related areas. ANZJOG will also publish comment from practitioners in these fields.

- We anticipate that most ANZJOG readers will be obstetricians and gynaecologists who practice in Australia and New Zealand and nearby countries of Asia and Oceania. Other interested readers may be general practitioners, midwives, women's health nurses and Indigenous health workers, as well as non-clinical scientists, epidemiologists and policy makers. Thus while submission is open to all we expect that most papers published will originate in these regions.



- We believe that ANZJOG should be accessible to clinicians across the spectrum of obstetrics and gynaecology. On occasion ANZJOG will publish papers with a primarily subspecialist slant, however such papers would normally have broad appeal amongst the readership of ANZJOG, including obstetricians and gynaecologists with general interests.

- In addition to Original Articles ANZJOG will publish high-quality expert reviews of topics of current interest in obstetrics, gynaecology and women's health; editorials commenting on current practice and research; and other articles including opinion pieces that are well referenced and which contribute meaningfully to the intellectual debate within the specialty. In general, opinion pieces expressing a particular view will be balanced by the publication of a second piece reflecting a differing viewpoint.

- Letters to the Editor on topics in previously published articles will be encouraged.

- There will be six issues annually, each of around 100 pages.

- All original research and other articles will be available online on EarlyView as soon as the proof reading and correction process has been finalised.

- A turnaround time of six weeks or less from reception of submissions to first decision* should be the norm for the majority of submissions.

- At all times the Editorial Board should be composed of members representing the full range of practice within the specialty of obstetrics and gynaecology.

*Acceptance, revision or rejection

FROM THE EDITOR'S DESK

Prof Caroline de Costa
FRANZCOG
Editor-in-Chief
ANZJOG

The February *ANZJOG* is the first issue for 2017, and the first in our new format. By making some changes to the paper used for both the cover and the text, we have been able to move to colour throughout the *Journal* – both as images supplied by authors and as colour used by our production department to highlight and distinguish between articles – with no increase in production costs. There have also been changes to the fonts and to the layout of articles that I hope will make for an enhanced reading experience. I would like to thank all College House and Wiley staff who have worked hard to make these changes possible.

There have been some changes also in the composition of the Editorial Board; Dr Gerry Wain, Prof Alec Welsh and Prof Peter Dietz have retired following many years of service to *ANZJOG*. In their place A/Prof Penny Blomfield and Dr Sean Seeho have joined the Board and I am happy to welcome them.

There are also a number of initiatives around the *Journal* to report. The first is the use of ORCID identifiers (iD) for the corresponding authors of all submissions to *ANZJOG*. An ORCID identifier is a unique and permanent identity number and password that ensures an author can be easily and correctly connected to their research and publications. Authors submitting to *ANZJOG* will only need to provide an ORCID iD once. For future submissions, their ORCID iD will appear automatically as part of their author details on the *ANZJOG* website. *ANZJOG*'s publisher, Wiley, is a founding member of ORCID, which aims to solve the problem of name ambiguity among contributors to research. More than 2.1 million ORCID iDs have now been issued around the world and this figure continues to grow as more journals and research institutions integrate ORCID into their workflows.

Secondly, our peer reviewers now have the opportunity to opt-in to receive recognition for their review contributions at Publons.com. Publons is an online resource that provides a way for reviewers to be recognised without breaking their anonymity in a format that can be used for CPD points, promotion and funding applications. You can read more about the Publons service at publons.com/in/wiley. *ANZJOG* reviewers are now automatically invited to join Publons when they return a review to the *Journal*'s website.

During 2016, our number of *ANZJOG* reviewers rose to 332, from 272 in 2015. I am extremely grateful to all our reviewers, who volunteer their services, but more reviewers are always welcome; for further information, contact Sarah Ortenzio at anzjog@ranzcog.edu.au.

Wiley also partners with Scimex, which ensures that *ANZJOG* articles that may be of direct public interest are picked up and mainstream media journalists notified. Since mid-December, four *ANZJOG* articles have appeared on Scimex. More information about Scimex and recent articles can be found at www.scimex.org.

While the concept of Impact Factors analysing and quantifying academic citations in academic journals is widely understood, the existence of Altmetric is probably less well known. Altmetric is a relatively new development that calculates the level of online interaction relating to the scholarly content of an article. If a paper has been mentioned in a news story or discussed via a social media platform, Altmetric not only collects this information, but also makes it readily available. Displayed in a colour-coded wreath, an Altmetric score indicates where a paper has been mentioned and the value of these mentions, as well as providing links to view all identified online communications. Readers of *ANZJOG* online will see that Altmetric provides scores for each paper. More information is available at www.altmetric.com.

Over the last year, a large proportion of Altmetric scores have been influenced by social media engagement, particularly Twitter. While the figures are low, we are working on growing our online presence as well as making this space more accessible to authors. When submitting articles authors now have the option of including a Twitter handle, which can be used for wider online promotion. In a time when social media may influence success, relying only on academic citations will not give an accurate picture of the reach of research. In the last issue of *O&G Magazine*, Natashija Katu provided further information about the use of Twitter.

And finally, a reminder that the *ANZJOG* app is live in the Apple and Google stores, with College members able to use their existing logins to access content.

Letter to the editor

Dr Mary Schramm
FRCOG, FRANZCOG(Hon)

I am writing to add, from my own experience, some points to the article, Emergency Peripartum Hysterectomy, which featured in O&G *Magazine*, Vol18; No4, p34:

There are two situations in which early division of the round ligaments (RLs) is a useful alternative to the procedural order as set out by the authors.

When lower segment caesarean section (LSCS) incisions extend laterally:

- inserting multiple deep sutures blindly places the ureter at risk, and is often ineffective; it was the source of all the cases of ureteric damage at caesarean section (CS) in my units, covering more than 100 000 births
- I found that early division of the RLs allows the uterus to be drawn upwards and away from the pelvic wall, and, ipso facto, away from the ureter. This gives good exposure of tears, even those extending into the vagina, permits more effective suturing under direct vision; and thus perhaps avoids a hysterectomy.

When a CS scar is densely adherent to the bladder:

- it is at risk of damage when pushed down as usual for access to the lower uterine segment, and such damage may go undetected until urine begins to leak through the vagina in the postoperative period
- if, after delivery through a higher uterine incision as recommended by the writers, further exploration or hysterectomy is indicated, the next step should be to divide the RLs, and open the broad ligaments anteriorly. This will allow the lateral extent of the adherent area to be identified and the lower uterovesical pouch defined by gentle finger dissection below the scar. Then, starting laterally, the bladder can be mobilised by sharp dissection under vision. If the bladder is damaged, it is easier to define and repair trauma at this level, which will be well above the trigone; but better still to leave a smidgin of uterine tissue attached to an intact bladder

I would like to make two further points:

- The RLs need very secure stitch-ties if they are not to retract and bleed deep within the inguinal canal.
- If the peripartum uterus tends to become flaccid, and a surgical nuisance after the uterine vessels have been secured, direct injection of oxytocics into the myometrium helps keep it firm, and easier to work around.

Volunteer diaries: urogynaecology in Uganda

Dr Jackie Smalldridge
MBBS, FRCOG, FRANZCOG

Over the past year, the College has been sourcing and publishing volunteer diaries from a number of our Fellows and members who have undertaken volunteer work, to provide support, encouragement and skill-sharing with colleagues who work in environments that are very different to our part of the world. Volunteer diaries are now published via a link on the RANZCOG Asia Pacific International Development (RAPID) network on CLIMATE, and it has also been decided to share these fascinating and inspiring stories to a wider readership through O&G *Magazine*. As an advocate for women's health at a global level, the College recognises the contribution that many of our members are making by supporting and working with colleagues to provide improved healthcare to women and their families beyond our shores. We hope that our readership will enjoy these tales from afar. If you would like to contribute a volunteer diary, please contact Carmel Walker, Senior Coordinator, Global Health Unit at cwalker@ranzcog.edu.au.

During July 2016, I was privileged to be part of a team of volunteers that visited Kagando in Uganda to provide prolapse and fistula treatments and surgeries. My fellow team members were Drs Gaik Imm Tan, Barbara Hall and John Taylor and long-term urogynaecology visitors Prof Judith Goh and Dr Hannah Krause.

After an eight hour bumpy car ride from Entebbe we worked for three weeks with wonderful peers trying to alleviate some of the urogynaecological conditions faced by women so they could move towards a healthier, happier and more comfortable lifestyle.

Prolapse Camp (6–12 July 2016)

Our Prolapse Camp was held in Kagando, a town in the foothills of the Rwenzori mountains, near the border with the Democratic Republic of Congo. We arrived on the afternoon of 6 July, and wasting no time, organised our equipment. By 3pm, we were on our feet, walking to the wards to be greeted by nurse, Harriet. Harriet has worked in Kagando hospital for more than 20 years and, together with the other nursing staff, has played a pivotal role in travelling to distant villages, finding and screening women with prolapse and fistula for the camp and looking after them pre- and postoperatively.

Harriet was delighted to see us and said that she had popped in to check if we had arrived numerous times. She had more than 40 patients waiting who were starting to get worried that we were not coming. There were women sitting out on grass just outside the ward, and the hospital had set up a makeshift tent as a ward to accommodate the patients postoperatively.

We set up at the screening room where we would assess the patients to determine if they would require surgery and plan the surgery or necessary treatment. We assessed a total of 50 women within three hours, with the help of the nurses as translators. The patients included some chronic procidentias and fistulas. We even saw a child as young as eight years old.

We sat down after the screening to schedule patients for theatre and organise the operating lists for the next day. We had identified more than 40 women who required surgery, which would take place over the next five days. We got back to the guesthouse just in time for dinner, had a long-awaited shower, unpacked, organised equipment and perishables for work the next day and finally rested. The anticipation of work and settling into the new environment kept some of us awake.

The next day, we headed down to the wards by 8am to do some last-minute organisation and to see if any more patients had turned up overnight (there were none). At other times the hospital would not have to deal with such large volumes of patients over the course of a few days, so it took a while to set up the theatres and necessary instruments. We had two operating tables in the room, with a curtain separating them, but no air conditioning. We tried to maintain as sterile a setup as possible.

Ward round with prof Judith Goh, Dr Barbara Taylor and the local Ugandan team.

Once we started, we were 'flying', getting one patient after another on the operating table and the sole nurse anaesthetist, Richard, running anaesthetics for both operations and having to leave for a caesarean or two in between as well. Kudos to Richard, who didn't even have time for a lunch break and didn't complain!

We managed to complete the 11 scheduled surgeries for the day and popped by the ward to make sure the patients were all right postoperatively by 6.30pm. It was a long and rewarding day and the start of many similar days to come. Over the next five days, we operated on 46 women with prolapse. Most of them had a vaginal hysterectomy, anterior and posterior repair and a sacrospinous fixation for a stage 3 or 4 prolapse. Some of the women wanted to keep their uterus and so had hysteropexies.

It was very hot in theatre under scrubs, plastic aprons and gowns and at the end of each operation our scrubs were very wet! There were times when the electricity and water went off and we just used our battery-operated headlights to see what we were doing.

We had lunch brought down to the operating theatre tearoom and then dinner at the guest house in the compound opposite the hospital, after which we fell into our beds. The patients had no major complications, although a few women had difficulty voiding post-op but that resolved quickly.

Drs Hall and Taylor then went to Fort Portal to train a local gynaecologist for a few days so Gail and I took the opportunity to do some exploring in the Queen Elizabeth National Park, looking at the wildlife and enjoying the views over the Rift Valley.

Fistula camp (14–25 July 2016)

Judith and Hannah arrived from Entebbe for the Fistula Camp and, following arrival, wasted no time in assessing the women who had been arriving for several days beforehand from far and wide. Judith and Hannah are very experienced fistula surgeons with international reputations who have been coming to Kagando for many years.

(left to right): Gail Imm Tan, Barbara Taylor, Judith Goh, John Taylor, Hannah Krause, Jackie Smalldridge, Anuba Rawat

Again, the staff, Harriet and Isaac, had done very well with the screening and logistics of picking up women from various locations so they could be assessed, putting out radio adverts and arranging minivans to pick them up. 96 women were assessed – the potential vesicovaginal fistula (VVF) patients requiring dye tests and careful examination to see where the fistula was. The next day we were back to the operating theatre, where we worked for the next seven days with the two beds in one theatre. Here, 69 operations were done – Judith and Hannah doing most of the VVFs – many of them were repeat surgeries (one patient had had six previous attempted repairs).

Gail and I did mainly the rectoviginal fistulae (RVF) and a few more prolapse repairs. We were able to assist/observe many complicated fistula repairs and were amazed at the complexity of the repairs and Judith and Hannah's abilities to find tissue planes to close the fistulae when there was so much tissue destruction. Local surgeons, Drs Job and Marvin, also observed and operated on a few cases and hopefully over time will be able to learn the skills to do fistula surgery effectively.

Postoperative patients.

Many of the women had heart-breaking stories, many had no live children, traumatic caesarean sections with ureteric injuries and so on, but the worst was one woman who had a traumatic VVF from the Rawandan Genocide in 1994. One eight-year-old girl fell out of a mango tree and sustained a traumatic RVF. The preoperative patients all had bowel prep, IV antibiotics, as at home, and the RVFs stayed for five days. The VVFs stayed for 14–21 days and had dye tests before discharge to check they were dry after we had departed.

The women were very stoic, managing with paracetamol and diclofenac and the occasional biscodyl for post-op pain and constipation. The postoperative ward rounds look like organised chaos with more than 40 patients to see before the list started in the morning, but we managed not to miss anyone out due to Hannah's 'book', which kept track of everything.

As well as the fistulae and prolapses, we saw a woman with a urethral diverticulum, a woman who needed a fat graft (Martius graft) and two laparotomies were done to re-implant ureters. There were some patients who needed oxybutynin for their detrusor overactivity and many needed bladder retraining and pelvic floor exercises, which was done by the nurses on the ward. We had four patients return to theatre: two RVFs broke down, one VVF leaked post-op and was resutured, and one haematoma was drained from a prolapse repair.

It's amazing to be part of a team of dedicated and skilful colleagues from whom you can learn so much about what's possible to do in a resource-poor environment. It certainly puts you to the test professionally and personally.

For more scholarly fistula information, you can download for free in ibooks 'Practical obstetric fistula surgery' by Hancock and Browning (Royal Society of Medicine Press 2009).

Hannah, Barbara and Judith operating.

Patients with Hannah and Judith

Senior Obstetric and Gynaecology Registrar, Intern Supervisor, Honiara Solomon Islands.

Length of position: 4–12 months
Commencement date: 8th August 2017

A volunteer position is available through Australian Volunteers for International Development (AVID) for a medical practitioner to undertake this role as part of the Solomon Islands Graduate Internship Supervision and Support Project (SIGISSP) funded by DFAT.

This project aims to support the Solomon Islands Ministry of Health and Medical Services to deliver the Bridging Program and Internship for medical graduates who have trained in Cuba and are returning to practise in the Solomon Islands. The role is suitable for a DRANZCOG Advanced or a FRANZCOG trainee interested in building junior doctors' clinical skills through on-the-job supervision and mentoring in a Pacific culture environment.

The duties and responsibilities of the position are to:

- supervise and support interns during their rotation on the O&G ward
- role model best-practice clinical care for patients
- support and participate in the implementation program/activities for the O&G department
- participate in the ongoing medical education training program
- support the Head of Department to improve processes and systems

FRANZCOG trainees interested in the position should discuss prospective approval with their regional training coordinator. Further information on the job role, supervision and timetable can be provided. AVID positions receive $2250 AUD per month in allowances.

For further information, please contact Dr David Simon FRANZCOG via email David.Simon@wghg.com.au or Jodi Cornish JCornish@avi.org.au, Project Manager SIGISSP.

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Excellence in Women's Health

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Supporting O&G practice in the Solomon Islands

Dr Leeanne Panisi
MMed(O&G), Fiji School of Medicine
Associate Member RANZCOG

RANZCOG has, for many years, provided intermittent support to the Solomon Islands, but in recent years the level of support has been constant. This contribution is invaluable as we work toward building the capacity of our O&G workforce to face the challenges in the Solomon Islands and strive to address the UN's Sustainable Development Goals (SDGs).

For me, taking up the position as Head of O&G at the National Referral Hospital in Honiara was a daunting experience following my graduation with the Master of Medicine (O&G) from Fiji School of Medicine in 2010. I returned to National Referral Hospital as an O&G Consultant in 2011, coming home to work in an environment with very little mentorship as I strove to step into the role of Head of O&G. My new level of responsibility required me to develop increased leadership, clinical and surgical skills as well as requiring me to take a longer term and broader view of our obstetrics, gynaecology and women's health services for the whole country, working in collaboration with colleagues across the Ministry of Health and Medical Services.

The National Referral Hospital is the one and only referral hospital for secondary and tertiary care for the Solomon Islands with our population of approximately 600 000 people. We have a maternal mortality rate of 114 per 100 000 live births (2015) and an infant mortality rate of 24 per 1000 live births (2015) nationally. The hospital has 330 beds, of which 94 are in the O&G department, with about 71 to 76 per cent of hospital admissions falling under the O&G department. In 2016, 5925 women gave birth in the unit. Our unit is very busy, with three specialists and two registrars.

Following my return to Solomons, I joined RANZCOG as an Associate Member in 2012, and now our young junior consultants, Dr Chris Dereveke and Dr Jack Siwainao, will also enjoy the educational opportunities and CPD provided, having recently graduated and become Associate Members at the end of 2016. Over the time my junior colleagues were undertaking their O&G training, I benefited from surgical and mentoring visits provided through the Pacific Islands Project (PIP) funded by the Australian Department of Foreign Affairs and Trade (DFAT) and managed through the Royal Australasian College of Surgeons (RACS). This assistance was invaluable at a time in my career when I was still feeling my way and gaining confidence in gynaecological surgery, especially with the range of complex surgeries presenting. These challenging surgeries are a day-to-day event, as most women present late with gynaecological conditions. My close association with mentors, Dr David Simon, Prof Glen Mola, Dr Alec Ekeroma and Dr Adel Mekhail, who have visited Honiara for surgical support visits through the PIP, and others I've met at international meetings and workshops, has been invaluable. This mentorship and networking continues.

In the last two years, with the return to the Solomons of a large influx of Cuban-trained interns, DFAT has initiated the Solomon Islands Graduate Internship Supervision and Support Project (SIGISSP) delivered through Australian Volunteers for International Development (AVID) funded by DFAT. The project funds a position of Senior O&G Registrar and Intern supervisor. Dr Victoria Snowball (FRANZCOG trainee) undertook this role in 2015 for six months and Dr Agatha Kujawa (DRANZCOG Advanced Trainee) will complete her term with us in early 2016. We will welcome advanced trainee Dr Rebecca Mitchell to this role in the near future. The AVID-DFAT-funded Senior O&G Registrar position is extremely valuable to us and, based on feedback from the program and Australian doctors, is mutually valuable to those who undertake the role.

Staff benefit enormously from workshops; our own Emergency Obstetrics Skills workshops and the Pacific Emergency Maternal and Neonatal Training (PEMNeT) workshop for facilitators provided by the Pacific Society for Reproductive Health (PSRH).

As well as training and educational support for our medical staff, we regard the development of our senior midwives as an integral part of the strategy to improve services for our women during the intrapartum period. Thus far, we have had 16 senior midwives in leadership roles undertake either a Brian Spurrett Fellowship in Middlemore Hospital, Auckland, or the DFAT-funded RANZCOG Pacific Midwifery Leadership Fellowship Program held in Sydney and this has made a huge difference to the contribution and insights provided by our midwives to the service.

Ms Kathy Gapirongo, Program Manager of the Reproductive and Child Health Unit at the Ministry of Health and Medical Services, has reported on her visit:

As the President for the PSRH, and on behalf of the Solomon Island midwives who have attended the RANZCOG Pacific Midwifery Leadership Fellowship Program, I wish to acknowledge DFAT and RANZCOG for continually supporting Pacific Midwives in this Fellowship program. Acknowledgement is also due to the Brian Spurrett Foundation, which initially set up this program, and has hosted several of our midwives at Middlemore Hospital, Auckland. All of the Solomon Island midwives who have had this opportunity have received great hospitality in the hospitals, clinics, workshops and at various conferences and engagements offered during their Fellowships.

Speaking of my recent experience during October and November 2016, I can say that participation in various workshops increased my confidence and presentation skills. The Midwifery Leadership program opened my eyes and minds to areas of improvement that I can slowly introduce back home in our local settings to help improve our maternal and infant morbidity and mortality status. Though we are aware of the big gaps that we have in our settings and facilities, we strive to provide quality services with the limited resources that we have, with the aim being to work collaboratively with our medical staff and increase the level of our contribution to be able to save the lives of our women and children in the Solomon Islands and the Pacific region as a whole. Obviously, we have limited access to advanced equipment but learning from the processes and systems that are used by the midwives and doctors in Australia and New Zealand is beneficial in motivating us to relook at the way we do things here and where improvements can be made. Our midwives have developed their own practice improvement projects applicable to our workplace settings, and we hope that the projects that we are planning to do – though small – will bring about improvements to our reproductive and maternal health services and the lives of our families in the long term. The RANZCOG Midwifery Leadership Program has been an extraordinary professional development opportunity for the midwives who have attended and we are truly appreciative of RANZCOG, DFAT and our host hospitals – Liverpool and Nepean in Sydney, and Middlemore in Auckland.

For further information on a position as Senior O&G Registrar/Intern Supervisor with the Australian Volunteers for International Development (AVID) Solomon Islands Graduate Internship Supervision and Support Project, see advertisement on page 72 or please contact Dr David Simon FRANZCOG David.Simon@wghg.com.au or Jodi Cornish JCornish@avi.org.au, Project Manager SIGISSP.

Above: Dr Aggie Kujawa with one of the post-natal nurses and her baby that Aggie delivered by c-section a month earlier. Top right: Dr Leeanne Panisi with labour ward staff, receiving donated goods from Australia. Bottom right: Srs Marilyn Iro, Kathy Gapirongo and Rebecca Manehanitai at the Pacific Midwifery Leadership Program, Sydney, November 2016.

Obituaries

Dr Kenneth John Little
(1938 – 2015)

Kenneth Little was born in Sydney on 31 January 1938. His secondary education was at Homebush Boys' High School, and he studied medicine at the University of Sydney, graduating in 1961. After his early postgraduate years at the Sydney Hospital, Ken became a resident at the Royal Hospital for Women in Paddington. He obtained a registrar post at St George Hospital in Kogarah. His interest in the speciality of obstetrics and gynaecology led him to seek a postgraduate position and he travelled to the UK, where he worked for two years at Bedford Hospital and Hammersmith Hospital in London. He obtained the MRCOG in 1969, and then returned to Australia to commence practice in Canberra. Ken worked in Canberra for his entire specialist career, until his retirement in 2000.

Those who knew and worked with Ken Little respected his keen intellect, even temperament and his ability to adapt to new ideas and techniques with ease. He never spoke ill of anyone, nor was he one to criticise. Even in high-stress areas, such as the labour ward and operating theatre, Ken never raised his voice and always appeared calm and in control. For these reasons, Ken received loyalty and respect from all who worked with him. Many midwives and theatre nurses came to Ken as patients, and this is testament to his skill and compassion. To his many colleagues in Canberra, Ken was the 'go to' person in an emergency and his opinions were respected and always soundly based.

Outside of medicine, Ken had many and varied interests. He loved golf, bridge, and classical music. He appreciated good food, fine wine and good company. Ken's death, after ten years of debilitating illness, saddened many of his friends and colleagues.

The comment of our colleague Dr Anne Hosking, a well-known Canberra obstetrician and former colleague of Ken, sums up his legacy: 'Ken had a good mind, he was a good doctor, he was a good friend but, most importantly, he was a good man.'

Ken Little died on 16 January 2015. He is survived by his wife, Helen, and their daughters Jacquie and Penny.

Dr Ian Threthewey and Prof Steve Robson

Dr Stafford Northcote MacLennan
(1921 – 2015)

Stafford MacLennan was born on 14 June 1921, in Hertfordshire, UK. He left school in 1939, aged 18, just as the UK was about to enter war with Germany.

Following a period of time working voluntarily on farms, Stafford joined the Royal Navy as an ordinary seaman, initially on destroyers. After working as an Able Seaman, he received a commission and volunteered to go on the Dutch submarines in the Far East and Asia.

After six years of military service, Stafford left the Royal Navy to study medicine at the London Hospital in London's East End. Qualifying as a doctor in 1952, he spent around 18 months as a junior doctor in various hospitals while completing his practical training. Stafford then joined the British Colonial Service as a doctor, serving in Semporna, North Borneo.

He served for three years in Borneo before returning to England where he worked as a ship's surgeon for approximately 18 months. It was during this this time that he met his wife, Mary.

Stafford subsequently obtained a position as a Medical Officer for Caltex Pacific and was posted to Sumatra, where Mary accompanied him. He served in this capacity for a number of years.

Following his retirement from Caltex Pacific, Stafford and Mary returned to the UK. From there the couple relocated to Brisbane, where Stafford served two different locum positions before moving to Darwin. In Darwin, he established his own practice in obstetrics and gynaecology.

Christmas Eve 1974 was a challenging time for the couple: Cyclone Tracey swept through Darwin, destroying their home. Stafford and Mary spent some time in Adelaide before returning to Darwin to rebuild their house and his practice. Stafford continued his obstetrics practice for a few more years before retiring.

Following his retirement, Stafford moved to Queensland where he and Mary lived at Clifton Beach. The couple later moved to Cairns and travelled extensively during their early retirement, enjoying the company of their many friends.

Stafford died in May 2015, one year after his wife, aged 93. He is survived by a cousin.

Cairns & District Family History Society

Dr Ralph Denison Upton
(1926 – 2016)

Ralph Upton was born in 1926 to Ralph and Vera Upton. He commenced the study of medicine at Sydney University in 1946. He was at Wesley College and a member of the University Rifle Club, representing the University and Wesley in shooting, receiving a Rifle Blue and an Imperial Blue (1950).

Following graduation from medical school in 1952, Ralph was a Junior Resident Medical Officer at Bathurst from 1952–53 and a Senior Resident Medical Officer at the Royal Melbourne Hospital from 1953–55, before being appointed a registrar position at the Women's Hospital, Crown Street during 1955–56. He then went to the UK and spent four years at Hammersmith and Manchester Hospitals, gaining his membership of the Royal College of Obstetricians and Gynaecologists (MRCOG) in 1958 and Fellowship of the Royal College of Surgeons (FRCS) in 1960.

Returning to Sydney, Ralph attained Fellowship of the Royal Australasian College of Surgeons in 1960 and was appointed to the

Royal Hospital for Women and Prince Henry Hospital as a Hospital Medical Officer (later Visiting Medical Officer). He was a member of the Australian Medical Association and foundation Fellow of the Royal Australian College of Obstetricians and Gynaecologists.

Outside of medicine, he had a wide range of interests. He joined the Royal Australian Naval Volunteer Reserve in 1960, rising to the rank of Surgeon Commander, and was awarded the Volunteer Reserve Decoration. He had farming and grazing interests and undertook a diploma course on Farm Management through the University of Sydney, Orange Agricultural College in 1996. He also had a pilot's licence with command rating and would fly himself and friends to various country areas.

He had a metal lathe with which he made stands for the World Congress on Obstetrics and Gynaecology, held in Sydney in 1967. He also invented a number of instruments, including modified Harrison-Cripps forceps, which were useful for artificial rupture of membranes.

Ralph had very firm principles and notably challenged the NSW Health Commission and its requirement that all Visiting Medical Officers retire at age 65. Ralph won the case using the argument of age discrimination, thus setting a precedent. Significantly, he did not retire until he was 71 (on principle).

Ralph married Dawn McLeish, the widow of a very close friend and colleague, Graeme, and inherited an extended family that he greatly enjoyed. He died on 4 July 2016.

Dr Stephen Steigrad

Dr Michael Simcock
(1935 – 2016)

Michael Simcock was born in 1935 in Dunedin, where his father was a mature medical student and his mother (who graduated MB ChB in 1927) was lecturing in the Department of Bacteriology of the Medical School. He was educated at Hereworth School, Havelock North, where he was Head of School (Dux) in 1948 and then New Plymouth Boys' High School, winning a University National Scholarship and was *proxime accessit* in 1952.

Mike had an outstanding academic record at the Medical School of the University of Otago. He was one of the few to be asked to take a BMedSc degree, which he did in biochemistry with Prof Norman Edson. From the fourth year of the medical course his main interest was obstetrics. He graduated MB ChB in 1959 at the top of his class, winning the Colquhoun prize for surgery, the Batchelor prize for obstetrics, and being awarded the travelling scholarship in obstetrics.

In 1960–61 he was a house surgeon with the Auckland Hospital Board; some of his extracurricular activities became legendary. His training in obstetrics continued at the Royal Women's Hospital, Melbourne under Professor Sir Lance Townsend, where he lost his spleen (in a car accident) and gained his wife, Barbara, who was also a doctor.

After three years as a registrar, he and his family, now increased by two children, travelled to the UK in 1965, where he worked in Oxford at the Radcliffe Infirmary under Profs Stallworthy and Hawkesworth for two years and later in Northampton with Prof Bob van Amerongen.

At the end of this time he had gained his MRCOG and Fellowship of the Royal College of Surgeons of Edinburgh (FRCSEd) and, in 1968, he returned to Australia to work at the Royal Hospital for Women in Paddington under Prof Harvey Carey. To quote his own words 'I found the cronyism and conservatism in the Sydney hospitals to be as bad as Melbourne so I ended up in Western Sydney pioneering partnerships in O&G, day surgery gynaecology, welcoming husbands into the labour ward and honing my skills in forceps deliveries.'

He is remembered fondly by two generations of women in Western Sydney, evidenced by the obvious admiration and loyalty engendered by his care for them. The obstetricians and gynaecologists he trained recall his combination of humility and confidence in the application of the principles of assessment of complex labours to decide what the best plan for delivery would be. They recall he was particularly skilful at rotational forceps deliveries. More importantly for them, he always made himself available, even when not rostered on call, for advice and attendance to supervise a difficult delivery. Invariably his legendary wit would set everyone at ease in the most stressful of situations. He retired from practice in 2005.

Mike died on 12 August 2016, aged 80. He is survived by his wife of 54 years, Barbara, his three children, Suzie, Matthew and Victoria, and eight grandchildren.

Dr Andrew Pesce, Dr Barbara Simcock and Dr Jon Simcock

Prof Geoffrey Laurence Driscoll OAM
(1947 – 2016)

Geoffrey Driscoll was born on 13 March 1947, in a small private hospital, in humble circumstances. Through his determination and diligence, after an early education disrupted by polio and its aftermath, he gained entry into medical school. He graduated MBBS in 1972, obtained his Membership of the Royal College of Obstetricians and Gynaecologists (MRCOG) in 1975, and obtained Fellowship of the Royal College of Surgeons of Edinburgh (FRCSEd) in 1978. Geoff obtained Fellowship of the Royal Australian College of Obstetricians and Gynaecologists (FRACOG) in 1979 and, following the amalgamation of the Australian and New Zealand Colleges, was admitted as a Fellow of RANZCOG in 1998.

He followed his initial training in Australia with further experience in Poole and Oxford in the UK. At Oxford, he developed his interest in reproductive medicine and was invited to return to Sydney to help establish the new department of O&G at Westmead Hospital and to start an infertility clinic. This was followed by the establishment of his private practice, Integrated Fertility Services, which was among the first IVF clinics in Australia. Later renamed City West IVF, this fertility service subsequently became the foundation practice of IVF Australia, now part of Virtus. Throughout all this commercial activity, Geoff's commitment remained to patient-centred care. His irrepressible energy made him immensely popular among his patients and staff.

Geoff was, variously, a College Training Supervisor, examiner and representative on various national committees. He was a foundation member of the Fertility Society of Australia, a council member, Chairman of the IVF Directors' Group, and subsequently elected a life member of the Society in 2006. He was also Chair of the Reproductive Technologies Accreditation Committee. His

contribution to O&G and the field of reproduction medicine was recognised in the 2014 Honours List with an OAM.

Geoff was totally committed in all his endeavours, both professional and social. His family was central to his life and his generosity to his friends was a hallmark. He loved his work, his sailing and his golf. Above all, he loved and cared for his family.

Geoff died on 5 October 2016, after retiring in September 2016, and is survived by Jan, his childhood sweetheart and wife of 46 years, his three daughters and nine grandchildren.

Dr Richard Fisher

Dr Stan Tsocanos
(1957 – 2016)

Stan Tsocanos was born on 30 July 1957, at Queen Victoria Hospital, Melbourne. He grew up in Windsor, but finished his secondary and tertiary studies while living in Armadale. Being the eldest child and eldest cousin, much of the extended family's hopes and aspirations rested on Stan's shoulders. The many people in his life always praised him and relished his accomplishments.

Stan attended Melbourne Boys' High School and from there gained entry to Monash University, where he studied medicine, ultimately leading him to specialise in obstetrics and gynaecology. Stan obtained Fellowship of the Royal Australian College of Obstetricians and Gynaecologists (FRACOG) in 1991 and, following amalgamation of the Australian and New Zealand Colleges, Fellowship of RANZCOG in 1998.

Stan spent time in Adelaide as part of his training and went into private practice in the early 1990s. He was an excellent obstetrician and gynaecologist and was a very good laparoscopic surgeon. Stan was warm hearted, sincere, friendly and kind to all. With his happy demeanour and wicked sense of humour, he would light up the delivery suite or theatre with his presence. Stan will be missed by all his colleagues and nursing staff.

Outside of medicine, Stan always wished for a retirement in property development projects with his brother.

Stan died on 25 October 2016. He is survived by his five sons: Simon, Timothy, Alexander, Campbell and Lucas.

Dr Nicholas Lolatgis

Dr James David O'Donovan
(1942 – 2016)

James O' Donovan, always known by his middle name David, was born in Cork County, Ireland on 3 May 1942, the son of a local doctor. The family moved to Sheffield, UK, where he commenced early education at St Theresa Co-Educational Roman Catholic School, before completing secondary school at the De La Salle Christian Brothers Grammar School. He remained a devout Catholic throughout his life.

His undergraduate studies were at Sheffield University (MBChB 1965), followed by medical practice in the UK, Canada and as a ship's doctor for P&O. David met his future wife, Cathy, on board ship when she was travelling from Australia to the UK to complete her postgraduate medical studies. He obtained Membership of the Royal College of Obstetricians and Gynaecologists (MRCOG) in 1970 in London and, in 1973, emigrated with his young family as '£10 Poms' to an appointment as Deputy Director of the King Edward Memorial Hospital in Perth, Western Australia. He subsequently entered private practice in Perth supported by his colleague Dr Mick Connaughton and in partnership with Dr John M Vujcich, before setting up a solo private practice.

David obtained Fellowship of the Royal Australian College of Obstetricians and Gynaecologists (FRACOG) in 1980, was elevated to Fellowship of the RCOG (FRCOG) in 1982, and, following the amalgamation of the Australian and New Zealand Colleges, was admitted as a Fellow of RANZCOG in 1998.

David was very busy throughout a long and successful career, attending seven different hospitals in Perth with regular trips to the country centre at Esperance for surgery and clinical consultations. He had a charismatic, vivacious personality with a great sense of humour, which was much loved by his patients and hospital staff. He travelled everywhere with Finbar, his faithful Rhodesian/Staffordshire cross, who regarded the Mercedes sports car as his kennel.

David retired in 2008 to spend time with his grandchildren and to write his professional memoire (The Delivery Man). He died unexpectedly on 5 November 2016, while playing tennis at the Peppermint Grove Tennis Club. He will be very sadly missed by his friends and family.

David is survived by his wife, Cathy, and their daughters, Amanda and Elizabeth, and two grandchildren, Xavier and Isadora.

Dr Graeme Smith, Dr John Vujcich, and Dr Freya Keogh

Jolene Davidson
(1981 – 2016)

The College community was saddened recently by the untimely death of esteemed staff member Jolene Davidson. Jolene joined the College on 14 April 2014, as Subspecialties Senior Coordinator, and continued in this role until 4 November 2016. Jolene will be remembered with affection and admiration as a gentle and conscientious person who made an exceptional contribution to the work of the Subspecialties and to the wider community at RANZCOG.

Notice of Deceased Fellows

The College was saddened to learn of the death of the following RANZCOG Fellows:

Dr Richard Bowen Stanley, Qld, 23 May 2012
Dr Robert William Ellwood, Qld, 13 August 2014
Prof Geoffrey Driscoll, NSW, 5 October 2016
Dr Stan Tsocanos, Vic, 25 October 2016
Mrs Mary Caffyn Wright Scott, UK, in October 2016
Dr James David O'Donovan, WA, 5 November 2016
Dr Lahui Geita, Papua New Guinea, 31 December 2016

Australia Day Honours

The College congratulates the following RANZCOG Fellows and Diplomates on recently receiving an Australia Day Honours award:

Dr Michael Edward Armstrong, for service to medicine and to the community, Member of the Order of Australia in the General Division (OAM).

Dr Cameron James Bardsley, for service to medicine in Queensland, Member of the Order of Australia in the General Division (OAM).

Dr Susan Downes, for significant service to rural and remote medicine in Western Australia as a general practitioner, and to Indigenous Health, Member of the General Division of the Order of Australia (AM).

Dr Patrick Hudson Giddings, for service to rural and remote medicine, Member of the Order of Australia in the General Division (OAM).

Dr Jennifer Kay King, for service to medicine in the field of obstetrics and gynaecology, Member of the Order of Australia in the General Division (OAM).

Dr Leonard Jack Kilman, for service to medicine in the field of obstetrics and gynaecology, Member of the Order of Australia in the General Division (OAM).

Raising awareness of O&G among medical students

Nastashjia Katu
Communications Coordinator

Over the last 11 years, 207 medical students from across Australia, New Zealand and the Pacific have been nominated by their medical schools to receive a RANZCOG Women's Health Award.

Established to highlight the work of the College and promote the specialty of obstetrics and gynaecology, the $500 award recognises a final-year student for exceptional achievement during the Women's Health rotation.

In 2016, nine medical schools participated in these awards. The College congratulates the following recipients of the Women's Health Award:

Anzel Jansen van Rensburg
Bond University

Archana Prasad
Fiji National University

Bradley Smiley
University of Wollongong

Claire Munro
University of Otago

Erika Strazdins
University of New South Wales

Natasha Stark
University of Notre Dame (Sydney)

Nicole Simpson
Griffith University

Yolanka Mariola Lobo
James Cook University

Revati Chopara
University of Auckland

THE LIAM & FRANKIE DAVISON AWARD 2017

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Excellence in Women's Health

For outstanding achievement *in literary writing* on an issue in women's health

Applications are invited
from senior secondary students resident in either Australia or New Zealand for the **2017 Liam and Frankie Davison Award**.

This $1000* award provides an exciting opportunity for students interested in medicine, science or health as well as being relevant to those looking to pursue careers in areas such as sociology, politics or law.

APPLICATIONS CLOSE
30 April 2017

ELIGIBILITY CRITERIA

Applications are open to students in their final three years of secondary school (generally Years 10, 11 and 12 in Australia, and Years 11, 12 and 13 in New Zealand).

All applications must include a completed application form and an original literary piece of not more than 2000 words on any topic of interest in women's health (examples include an opinion piece on a social issue, a short story, a report etc).

In 2016, there were both **fictional** and **factual** pieces addressing a broad range of **women's health issues** including anorexia, women's rights, infertility, termination of pregnancy and violence against women.

Up to two Liam and Frankie Davison Awards may be awarded in any year the award is offered for application.

MORE INFORMATION:

For full Terms and Conditions of Entry, the application form and previous years' winning entries visit: www.ranzcog.edu.au/about/foundation/Liam-and-Frankie-Davison-Award
or contact the Foundation Coordinator t: +61 3 9417 1699 e: lfdaward@ranzcog.edu.au

* Up to two awards offered; winning entrant(s) will receive $1000 in AUD or NZD, as applicable, based on country of residence.

RANZCOG

2017 ANNUAL SCIENTIFIC MEETING

ranzcog2017asm.com.au

VIEW FROM THE TOP

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists

Excellence in Women's Health

Kia ora koutou

Greetings, hello to you all,

We are really excited to be hosting the RANZCOG 2017 Annual Scientific Meeting on **29 October – 1 November 2017** at the SKYCITY Convention Centre in Auckland, New Zealand.

The Organising Committee is planning a top-notch meeting, with plenary sessions, concurrent streams, a debate, interactive workshops and daily breakfast sessions. The aim is to put science back on the program: a *View from the Top* will examine using cutting-edge research to help conquer clinical challenges.

So, please, cross the ditch to join us in Auckland for the RANZCOG 2017 ASM and experience the highlights of our diverse country, Aotearoa!

Dr Gillian Gibson
Chair, Organising Committee

Professor Wayne Gillett
Chair, Scientific Program

CALL FOR ABSTRACTS – SHOWCASE YOUR WORK ALONGSIDE LEADING EXPERTS!

Abstracts are invited for Free Communication (Oral) and Poster presentations on any topic relevant to women's health. The deadline for abstract submission is **Sunday, 11 June 2017.**

Accepted abstracts will be published in a supplement issue of *ANZJOG*.

Prizes will be awarded for:

- Best Free Communication – Aldo Vacca Award
- Best Poster
- RANZCOG Early Career Researcher Award
- RANZCOG Diplomate Researcher Award

Visit the meeting website to view the Abstract Preparation and Submission Guidelines and to submit an abstract online.

29 October – 1 November 2017

SKYCITY Auckland Convention Centre, Auckland, New Zealand

KEY DATES

Call for Abstracts Open	**Now Open**
Registrations Open	**Now Open**
Call for Abstracts Closes	**11 June 2017**
Notification to Authors	**10 July 2017**
Authors to Confirm Participation	**31 July 2017**
Deadline for Authors Registration	**11 August 2017**
Early Bird Registration Closes	**11 August 2017**
RANZCOG 2017 ASM	**29 October – 1 November 2017**

KEYNOTE SPEAKERS

Dr Jo Black
Professor Aaron Caughey
Mr Shane Duffy
Professor Douglas Tincello

Visit the meeting website to register online **ranzcog2017asm.com.au**