Surgical Menopause

KEY POINTS

- Removal of both ovaries (bilateral oophorectomy) before a woman has gone through her natural menopause is referred to as "surgical menopause"
- Bilateral oophorectomy may be performed at the time of hysterectomy for benign disease or gynaecological cancers, or as part of risk reduction treatment in women with an inherited increased cancer risk
- Negative effects of surgical menopause include a sudden onset of severe menopause symptoms, loss of fertility, and increased risks of osteoporosis, cardiovascular disease, sexual dysfunction, mood disorders and cognitive issues
- Menopausal hormone therapy (MHT) is advised for all women who undergo surgical menopause before the age of natural menopause, provided they do not have contraindications to MHT use.

What is surgical menopause?

Menopause refers to the final menstrual period. The average age of menopause in Australia is around 51 years, but most women start to experience perimenopausal symptoms due to decreasing ovarian oestrogen levels from their mid-40s, starting with a change to their menstrual cycles (1). Surgical removal of both ovaries (bilateral oophorectomy) before the average age of natural menopause is referred to as surgical menopause. Earlier menopause may also occur due to other gynaecological procedures, such as uterine artery embolisation, hysterectomy with ovarian conservation, or ovarian cystectomy, presumably due to compromised ovarian blood supply (2,3).

Indications for bilateral oophorectomy

Bilateral oophorectomy (usually with bilateral salpingectomy) is uncommonly performed at the time of hysterectomy for benign disease in premenopausal women, e.g. for management of heavy menstrual bleeding (4).

A more common indication for this procedure is to reduce the risk of ovarian cancer; this is especially relevant and beneficial to women who carry an inherited increased risk of developing cancer due to gene mutations in BRCA or HNPCC (Lynch Syndrome), for example (5). In general, bilateral oophorectomy is not recommended for premenopausal women who are concerned about ovarian cancer risk but have no inherited increased risk, as the disadvantages of removing normal, healthy ovaries prior to the average age of menopause far outweigh the very small risk of ovarian cancer (6).

Some premenopausal women may elect to have their ovaries removed for other indications, such as endometriosis, persistent pelvic pain, and premenstrual dysphoric disorder. Their healthcare provider may suggest a trial of medically-induced menopause prior to surgery for these women, both to test how surgical menopause may affect their underlying symptoms, and also to allow a trial of MHT to test for patient tolerance to the hormone therapy (7).

Positive effects of surgical menopause

- Reduced risk of ovarian cancer in women who are at an increased risk due to inherited genetic mutations
- Reduced anxiety around developing ovarian cancer in this population
- Reduced symptoms of persistent pelvic pain, particularly in women with endometriosis or pelvic adhesions who have ovarian involvement
- Reduced symptoms of premenstrual dysphoric disorder

Negative effects of surgical menopause

- Sudden and severe onset of vasomotor symptoms (VMS) and genitourinary syndrome of the menopause (GSM)
- Loss of bone density and increased risk of osteoporosis and possibly fractures (8)
- Increased risk of cardiovascular disease and an associated increase in mortality risk (9,10)
- Increased risk of cognitive impairment, including dementia (11,12)
- Impaired sexual function due to GSM symptoms, and hypoactive sexual desire disorder (HSDD) due to loss of ovarian testosterone production (13)
- Increased long-term risk of depression and anxiety (14)
- Loss of fertility potential

Management of surgical menopause

Ideally, a menopause specialist should review premenopausal women prior to them undergoing bilateral oophorectomy, to explain the potential adverse consequences of surgical menopause and to plan for symptom management and long-term health optimisation (2).

Lifestyle management and ongoing monitoring

Evidence-based lifestyle management strategies for reducing cardiovascular and cognitive risk, and for maintaining bone density, should be discussed. These may include advice around diet, exercise, smoking and alcohol, and ensuring adequate sleep and dietary calcium and vitamin D intake. Cardiovascular risk factors should be assessed annually. In Australia, women who are under the age of 45 who have been hypogonadal for 6 months or more are entitled to Medicare bone density scans, which should be performed every 2 years.

Symptom management

Current international guidelines recommend the use of MHT for all women who undergo early menopause, even if they have minimal menopausal symptoms, provided that they do not have any contraindications to use (3, 15, 16). MHT should be commenced as soon as possible post-operatively, reviewed within 6-12 weeks for symptom response, and continued at least until the average age of menopause. MHT is highly effective at treating VMS and GSM in this population, although higher oestrogen doses may be required in younger women than that used at the average age of menopause, to achieve physiological doses of oestradiol (3, 15). MHT can be commenced at a standard dose and titrated up according to response and side-effects. MHT can be prescribed to women who have had a bilateral oophorectomy performed for cancer risk reduction, and who have no contraindications to its use, without increasing their risk of breast cancer (17). Most guidelines recommend changing these patients to non-hormonal treatments for VMS if they are still required beyond the age of natural menopause, although there is minimal evidence for this recommendation (16, 18).

A progestogen needs to be used in women who retain their uterus and should be considered for women with a history of endometriosis, even if she has had a hysterectomy, due to concerns about disease and symptom recurrence (19). Tibolone may also be considered as MHT for women with a history of endometriosis (2). Given that higher oestrogen doses may be required for symptom management in younger women, correspondingly higher doses of a progestogen may also be necessary (3).

Prevention of morbidity and mortality

While a lack of longitudinal outcome data currently exists for this population, MHT has been shown in observational studies to reduce risks of osteoporosis and fracture, cardiovascular morbidity and mortality, and cognitive issues (16). Observational data show a probable "window of opportunity" for MHT initiation early after surgical menopause, especially to mitigate cardiovascular and cognitive risk (3).

Management of sexual dysfunction and psychosocial risks

The sexual and psychological dysfunction arising after surgical menopause is complex and is likely to arise not only due to hormonal changes but also due to potential early ageing, self-esteem and body-image issues, emerging mood disorders and concerns around loss of fertility (3). As such, a biopsychosocial model is often required for the management of both sexual and psychological concerns after surgical menopause.

MHT may improve some aspects of sexual dysfunction and vaginal oestrogen or dehydroepiandrosterone can be added to systemic MHT to further improve GSM symptoms (15). In addition, for women with HSDD despite MHT use, testosterone therapy can be considered, but women need to be advised that long-term efficacy and safety are unknown (16, 20). Note that currently there is conflicting evidence for use of testosterone for other indications in patients with early menopause, specifically for neurological function, bone health and cardiovascular health (16).

With regards to the increased long-term risk of a diagnosis of depression and/or anxiety following surgical menopause, given that these risks have only been identified in observational studies, it is unclear whether or not MHT use mitigates these risks (14).

Content updated December 2024

Further information

A Practitioner's Toolkit for Managing Menopause
https://www.menopause.org.au/images/pics/ptmm/a-practitioners-toolkit-for-managing-menopause.pdf

Australasian Menopause Society guide to MHT/HRT doses – Australia
https://www.menopause.org.au/hp/information-sheets/ams-guide-to-mht-hrt-doses

AMS guide to MHT/HRT doses - New Zealand
https://www.menopause.org.au/hp/information-sheets/ams-guide-to-mht-hrt-doses-nz

Premature ovarian insufficiency: International Menopause Society White Paper
https://www.tandfonline.com/doi/full/10.1080/13697137.2020.1804547

ESHRE guideline on Premature Ovarian Insufficiency
https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Premature-ovarian-insufficiency

Surgical menopause: a toolkit for healthcare professionals (British Menopause Society)
https://thebms.org.uk/wp-content/uploads/2021/06/13-BMS-TfC-Surgical-Menopause-JUNE202102B.pdf

References

1. Harlow SD, Gass M, Hall JE, Lobo R, Maki P, Rebar RW, Sherman S, Sluss PM, de Villiers TJ; STRAW 10 Collaborative Group. Executive summary of the Stages of Reproductive Aging Workshop +10: addressing the unfinished agenda of staging reproductive aging. *Menopause* 2012; 19(4): 387-95.
2. Hamoda H, Sharma A. Premature ovarian insufficiency, early menopause, and induced menopause. *Best Practice & Research Clinical Endocrinology & Metabolism* 2024; 38: 101823.
3. Panay N, Anderson RA, Nappi RE, Vincent AJ, Vujovic S, Webber L, Wolfman W. Premature ovarian insufficiency: an International Menopause Society White Paper. *Climacteric* 2020; 23(5): 426-46.
4. Hickey M, Ambekar M, Hammond I. Should the ovaries be removed or retained at the time of hysterectomy for benign disease? *Human Reproduction Update* 2009; 16(2):131-41.

5. Rebbeck TR, Kauff ND, Domchek SM. Meta-analysis of risk reduction estimates associated with risk-reducing salpingo-oophorectomy in BRCA1 or BRCA2 mutation carriers. *Journal of the National Cancer Institute* 2009; 101(2):80-87.
6. Parker WH, Shoupe D, Border MS, Liu Z, Farquhar C, Berek JS. Elective oophorectomy in the gynaecological patient: when is it desirable? *Current Opinion in Obstetrics and Gynecology* 2007; 19(4):350-54.
7. Green LJ, O'Brien PMS, Panay N, Craig M on behalf of the Royal College of Obstetricians and Gynaecologists. Management of premenstrual syndrome. *British Journal of Obstetrics and Gynaecology* 2017; 124: e73–e105.
8. Gallagher JC. Effect of early menopause on bone mineral density and fractures. *Menopause* 2007; 14:567-71.
9. Honigberg MC, Zekavat SM, Aragam K, Finneran P, Klarin D, Bhatt DL, Januzzi Jr JL, Scott NS, Natarajan P. Association of premature natural and surgical menopause with incident cardiovascular disease. *Journal of the American Medical Association* 2019; 322(24):2411-21.
10. Rocca WA, Grossardt BR, de Andrade M, Malkasian GD, Melton LJ 3rd. Survival patterns after oophorectomy in premenopausal women: a population-based cohort study. *Lancet Oncology* 2006; 7(10):821-8.
11. Bove R, Secor E, Chibnik LB, Barnes LL, Schneider JA, Bennett DA, De Jager PL. Age at surgical menopause influences cognitive decline and Alzheimer pathology in older women. *Neurology* 2014;82(3):222-9.
12. Rocca WA, Bower JH, Maraganore DM, Ahlskog JE, Grossardt BR, de Andrade M, Melton LJ 3rd. Increased risk of cognitive impairment or dementia in women who underwent oophorectomy before menopause. *Neurology* 2007;69(11):1074-83.
13. Nappi RE, Cucinella L, Martini E, Rossi M, Tiranini L, Martella S, Bosoni D, Cassani C. Sexuality in premature ovarian insufficiency. *Climacteric* 2019;22(3):289-295.
14. Rocca WA, Grossardt BR, Geda YE, *et al*. Long-term risks of depressive and anxiety symptoms after early bilateral oophorectomy. *Menopause* 2018; 25:1275-85.
15. Hamoda H in collaboration with the medical advisory council of the British Menopause Society. Premature ovarian insufficiency (Consensus Statement). Reviewed 2024. Premature ovarian insufficiency - British Menopause Society (thebms.org.uk)
16. The ESHRE Guideline Group on POI, Panay N, Vincent AJ et al. ESHRE Guideline: management of women with premature ovarian insufficiency, 2024. https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Premature-ovarian-insufficiency

17. Gordhandas S, Norquist BM, Pennington KP, Yung RL, Laya MB, Swisher EM. Hormone replacement therapy after risk reducing salpingo-oophorectomy in patients with BRCA1 or BRCA2 mutations; a systematic review of risks and benefits. *Gynecologic Oncology* 2019;153:192-200.
18. Gard A, Robinson L in collaboration with the medical advisory council of the British Menopause Society. Surgical menopause: a toolkit for healthcare professionals. Reviewed 2024. https://thebms.org.uk/wp-content/uploads/2021/06/13-BMS-TfC-Surgical-Menopause-JUNE202102B.pdf
19. Secosan C, Balulescu L, Brasoveanu S, Balint O, Pirtea P, Dorin G, Pirtea L. Endometriosis in Menopause-Renewed Attention on a Controversial Disease. *Diagnostics* (Basel) 2020;10(3):134.
20. Davis SR, Baber R, Panay N, Bitzer J, Cerdas Perez S, Islam RM, Kaunitz AM, Kingsberg SA, Lambrinoudaki I, Liu J, Parish SJ, Pinkerton J, Rymer J, Simon JA, Vignozzi L, Wierman ME. Global Consensus Position Statement on the Use of Testosterone Therapy for Women. *Climacteric* 2019;22(5):429-434.