Selección de Resúmenes de Menopausia

Semana del 21 a 27 de mayo, 2025

María Soledad Vallejo. Obstetricia Ginecología. Hospital Clínico. Universidad de Chile

Biochem Biophys Res Commun. 2025 May 20:772:152050.doi:10.1016/j.bbrc.2025.152050.Online ahead of print.

Mitochondrial calcium homeostasis mediated by estradiol contributes to atrial fibrillation protection

Bing Lu 1, Bingying Huang 1, Ying Wang 2, Guizhou Ma 2, Zhixiong Cai 3

Background: Atrial fibrillation (AF) exhibits marked sex disparities, with premenopausal women showing lower incidence than age-matched men. However, the molecular mechanisms underlying estrogen's cardio protective effects remain unclear. Mitochondrial calcium (Ca2+_m) mishandling is a key driver of AF, but it is unknown whether estrogen regulates Ca2+_m homeostasis through Mitochondrial Calcium Uniporter (MCU). Methods: Ovariectomized (OVX) female Sprague-Dawley rats were subjected to atrial pacing-induced AF for evaluation. Cardiac calcium dynamics, mitochondrial membrane potential (ΔΨm), and expression of calcium-regulating proteins (MICU1, NCX, LETM1) were assessed. In vitro, H9C2 cardiomyocytes under electrical stimulation (0.2 V/cm, 24h) were treated with estradiol (500 nM) or subjected to MCU knockdown (CRISPR-Cas9). Results: OVX exacerbated AF susceptibility in rats, as evidenced by prolonged AF duration, reduced serum estradiol, and disrupted myocardial calcium homeostasis. OVX-AF hearts exhibited upregulated MICU1, NCX, and LETM1, alongside ΔΨm collapse (JC-1 monomer). Under electrical stimulation, cardiomyocytes displayed calcium homeostasis dysregulation, decreased ΔΨm, elevated ROS levels, along with concurrent downregulation of both MCU and ERβ protein expression, Estradiol supplementation normalized [Ca2+]mt, restored ΔΨm. Strikingly, MCU knockdown abolished estradiol's protective effects, inducing irreversible [Ca2+]mt overload and a surge in reactive oxygen species (ROS). Conclusions: We reveal that estradiol modulates MCU-mediated mitochondrial calcium homeostasis to ameliorate AF-related cellular phenotypes in vitro, implicating the estrogen-MCU axis as a promising intervention target, though its in vivo cardioprotective effects demand additional investigation. Estrogen deficiency disrupts this axis, triggering maladaptive upregulation of MICU1/NCX/LETM1 and calcium-driven remodeling. Targeting ERβ-MCU signaling may offer novel therapeutic strategies for AF, particularly in hypoestrogenic states such as menopause.

Maturitas. 2025 May 24:198:108608. doi: 10.1016/j.maturitas.2025.108608. Online ahead of print.

Menopause and arterial stiffness index: insights from the women's UK Biobank cohort

Alexandre Vallée 1

Background: Menopause is a significant physiological transition characterized by hormonal changes that can influence cardiovascular health. One key concern is increased arterial stiffness, a predictor of cardiovascular disease and adverse cardiovascular events. However, the independent association between menopause and arterial stiffness, beyond traditional cardiovascular risk factors, remains unclear. This study investigates the relationship between menopause and arterial stiffness index in the women's UK Biobank cohort. Methods: This cross-sectional study included 52,891 women from the UK Biobank with measurements of arterial stiffness index. Arterial stiffness index was assessed using a non-invasive photoplethysmographic method. Multiple linear and logistic regression models were used to examine the association between menopause status and arterial stiffness index (continuous and cutoff>10 m/s), adjusting for age, body mass index, antihypertensive medication use, income, education, dyslipidemia, alcohol consumption, chronic kidney disease, smoking, diabetes, heart rate, mean blood pressure, hormone therapy, and previous cardiovascular disease. Results: Postmenopausal women had significantly higher values of arterial stiffness index (9.10 ± 4.61 m/s) than premenopausal women (7.76 ± 2.72 m/s, $p < 0.001$). Menopause was independently associated with increased arterial stiffness index (B = 0.22, 95 % CI [0.16-0.28], $p < 0.001$) and a higher odds ratio for arterial stiffness index >10 m/s (OR = 1.41, 95 % CI [1.31-1.51], $p < 0.001$), after adjusting for confounders. Conclusion: Menopause is significantly associated with increased arterial stiffness, independent of traditional cardiovascular risk factors. These findings highlight menopause as a critical period for cardiovascular health assessment and prevention strategies.

Nat Rev Gastroenterol Hepatol. 2025 May 23. doi: 10.1038/s41575-025-01075-7. Online ahead of print.

Menopause and gastrointestinal health and disease

Dana Ley 1, Sumona Saha 2

Menopause has far-reaching effects on human physiology, including the gastrointestinal tract, and can negatively influence the quality of life of women who are affected. Menopause can have multiple effects on gastrointestinal function, including altering gut motility and changing the composition of the gut microbiota. As a result, some gastrointestinal and hepatic conditions are more common among individuals in peri- and postmenopause, and people with these conditions before menopause might also experience greater symptom severity and worse health-related quality of life during this time. The use of hormone replacement therapy to treat menopausal symptoms might also affect gastrointestinal health and well-being. Individuals in postmenopause are at risk for bone remodelling and osteoporosis due to ageing and loss of sex hormones. However, secondary osteoporosis can also occur due to medications used to treat gastrointestinal conditions (for example, glucocorticoids and other immunosuppressive medications) and the conditions themselves (for example, autoimmune disease or coeliac disease). Although all people who menstruate will eventually transition to menopause, there are relatively few studies evaluating the effect of menopause on gastrointestinal symptoms and quality of life. This Review aims to summarize available evidence and highlight areas where research is needed.

Endocrine. 2025 May 23. doi: 10.1007/s12020-025-04265-0. Online ahead of print.

The role of anti-Müllerian hormone: insights into ovarian reserve, primary ovarian insufficiency, and menopause prediction

Eleftheria Karaviti # 1, Dimitra Karaviti # 1, Eleni-Rafaela Kani # 1, Efstathia Chatziandreou 2, Stavroula A Paschou 3, Theodora Psaltopoulou 1, Sophia Kalantaridou 4, Irene Lambrinoudaki 2

This review highlights the role of Anti-Müllerian Hormone (AMH) in ovarian insufficiency and as a predictor of menopause. AMH, produced by granulosa cells in growing follicles, is a key marker of ovarian reserve, reflecting the remaining pool of viable follicles. In cases of primary ovarian insufficiency (POI), AMH levels are significantly reduced, aiding in diagnosis and distinguishing POI from other causes of amenorrhea. AMH levels below 8 pmol/L have shown high sensitivity (85%) and specificity (100%) for diagnosing POI in women with secondary oligomenorrhea. Regarding ovarian aging, AMH declines steadily with age, serving as a reliable predictor of menopausal timing. AMH levels are linked to menopausal symptoms, particularly vasomotor symptoms like hot flashes and their severity. However, its reliability for diagnosing menopause is inconsistent, especially in younger populations or when determining the exact onset. AMH levels can predict an earlier onset of menopause with limited sensitivity and specificity, particularly when using age-specific concentrations, as lower age-specific AMH levels are associated with an earlier menopause onset. Tracking AMH over time can improve the prediction of menopause. The accuracy of AMH measurements can be enhanced when considered alongside other hormonal markers or clinical symptoms. In polycystic ovary syndrome (PCOS), elevated AMH levels suggest a delayed onset of menopause, indicating an approximately two-year longer reproductive lifespan compared to women without PCOS (mean menopause age: 51.4 years in PCOS cases vs. 49.7 years in healthy controls). In endometriosis, AMH levels generally decline after surgery; however, they remain stable after chemotherapy, even years later, indicating that the decline in ovarian reserve may not be significantly affected.

Gigascience. 2025 Jan 6:14:giaf060. doi: 10.1093/gigascience/giaf060.

A Case for estradiol: younger brains in women with earlier menarche and later menopause

Eileen Luders 1 2 3 4, Inger Sundström Poromaa 1, Claudia Barth 5, Christian Gaser 6 7 8

The transition to menopause is marked by a gradual decrease of estradiol. Concurrently, the risk of dementia in women increases around menopause, suggesting that estradiol (or the lack thereof) plays a role in the development of dementia and other age-related neuropathologies. Here, we set out to investigate whether there is a link between brain aging and estradiol-associated events, such as menarche and menopause. For this purpose, we applied a well-validated machine learning approach to analyze both cross-sectional and longitudinal data from a sample of 1,006 postmenopausal women who underwent structural magnetic resonance imaging twice, approximately 2 years apart. We observed less brain aging in women with an earlier menarche, a later menopause, and a longer reproductive span (i.e., the time interval between menarche and menopause). These effects were evident both cross-sectionally and longitudinally, supporting

the notion that estradiol has neuroprotective properties and contributes to brain preservation. However, further research is required because the observed effects were small, estradiol was not directly measured, and other factors may modulate female brain health. Future studies might benefit from incorporating actual estradiol (and other hormone) measures, as well as considering genetic predispositions and lifestyle factors alongside indicators of brain aging to deepen our understanding of estradiol's role in maintaining brain health. Additionally, including more diverse study populations (e.g., varying in ethnicity, socioeconomic status, and health status) in follow-up research would enhance the generalizability and applicability of these findings.

Climacteric. 2025 May 22:1-6. doi: 10.1080/13697137.2025.2503880. Online ahead of print.

Menopausal symptoms: what are the differences between the West and the East?

Ruiyi Tang 1 2, Qingyuan Liu 1 2 3, Qi Yu 1 2

The characteristics of menopause symptoms exhibit considerable variation across different countries and regions. Understanding these variations is crucial for developing strategies to manage the menopausal symptoms specific to each region. A comparative analysis of menopausal symptoms between the East and the West is presented, based on a review of the epidemiological literature and data. In the East, the age of menopause and the onset of the menopausal symptoms were observed to occur slightly earlier than in the West. The two most commonly reported menopausal symptoms in western countries are hot flushes and sleeplessness, whereas Asian women mostly report somatic symptoms. The reported prevalence of menopausal symptoms varies considerably and differs substantially between the studies. These variations may be related to research methods, sample size, ethnicity, culture, socioeconomic differences, menopausal status and other factors.

J Obstet Gynaecol India. 2025 Apr;75(Suppl 1):62-69. doi: 10.1007/s13224-024-01993-7. Epub 2024 Jun 14.

Optimal Timing of Transvaginal Ultrasound to Diagnose Endometrial Polyps in Women with Abnormal Uterine Bleeding

Athar Rasekh Jahromi 1, Hamideh Ebadat 2, Mohammad Jokar 3, Nikta Taghipour 4, Vahid Rahmanian 5

Introduction: Abnormal uterine bleeding (AUB) is the most common symptom of the endometrial polyps in fertile and postmenopausal women. This study aimed to determine the optimal time to perform a transvaginal ultrasound to diagnose endometrial polyps in the women with abnormal uterine bleeding (AUB). Method: This descriptive study from the category of a follow-up study was conducted on 350 a group of fertile women with AUB that referred to a women's clinic in Jahrom, Southern Iran. The women with abnormal uterine bleeding at the women's clinic underwent transvaginal sonography. The research included patients who had endometrial polyps discovered during the sonography. Transvaginal sonography was performed on each patient once in the luteal and once in the follicular phases. A hysteroscopy was then conducted in order to get an accurate diagnosis. The collected data were analyzed using SPSS software version 18. The receiver operating characteristic (ROC) curve was used to determine the optimal time to perform the ultrasound to diagnose endometrial polyps. Results: Among the women in the study, 88.8% (310 participants) were multiparous, and endometrial polyps were detected in 47.4% (166 patients) with the transvaginal sonography of the women. Finally, endometrial polyps were confirmed for 107 patients (64.45%) with hysteroscopy. ROC curve analysis showed that the optimal time to diagnose the endometrial polyps with transvaginal ultrasound was on days 11-13 of the menstrual cycle during the follicular phase, with a sensitivity of 82.5% and a specificity of 73%. Conclusions: By designating days 11-13 of the follicular phase of the menstrual cycle as the ideal time to utilize transvaginal ultrasound for the purpose of diagnosing endometrial lesions, it is possible to reduce errors and enhance the accessibility of treatment and diagnosis. This study provides essential information for clinicians to identify the endometrial polyps in the women with AUB.