



# Menopause

The Journal of The North American Menopause Society

VOLUME 27, ISSUE 3 2020

SDC

Supplemental Digital Content is available.

OPEN

Open Access article.

## CONTENTS

### Editorials

251

**Vet for fat—epicardial versus paracardial types and atherosclerosis risk**

Amos Pines, MD

253

**Clear vision in postmenopausal women: role of hormone therapy and diabetes**

Juan Ding, OD, PhD

### Original Studies

255

SDC

**Heart fat and carotid artery atherosclerosis progression in recently menopausal women: impact of menopausal hormone therapy: The KEEPS trial**

Samar R. El Khoudary, PhD, MPH, Vidya Venugopal, PhD, JoAnn E. Manson, MD, Maria M. Brooks, PhD, Nanette Santoro, MD, Dennis M. Black, PhD, Mitchell Harman, MD, Frederick Naftolin, MD, DPhil, Howard N. Hodis, MD, Eliot A. Brinton, MD, Virginia M. Miller, PhD, Hugh S. Taylor, MD, and Matthew J. Budoff, MD

*The use of hormone therapy in recently menopausal women modifies the associations between paracardial fat and carotid intima media thickness (CIMT). Results suggests that oral conjugated equine estrogens may slow down the adverse impacts of heart fat accumulation outside the pericardial sac on CIMT as compared to 17 $\beta$ -estradiol.*

263

OPEN

SDC

**Interaction between postmenopausal hormone therapy and diabetes on cataract**

Christy Costanian, PhD, Marie-Josée Aubin, MD, MSc, Ralf Buhmann, PhD, and Ellen E. Freeman, PhD

*This study investigated whether postmenopausal hormone therapy (HT) use interacts with diabetes, a risk factor for several age-related eye diseases. It was found that long-term HT use and type 2 diabetes interact in their relationship with cataract such that the odds of cataract is highest in that group.*

(continued)

**Menopause: The Journal of The North American Menopause Society** (ISSN 1072-3714) is published monthly for The North American Menopause Society by Wolters Kluwer Health, Inc. Business and production offices are located at Two Commerce Square, 2001 Market St., Philadelphia, PA 19103. All rights reserved. Copyright © 2020 by The North American Menopause Society.

**POSTMASTER:** Send address changes to *Menopause: The Journal of The North American Menopause Society*, P.O. Box 1610, Hagerstown, MD 21740.

269

SDC

**Hot flashes are associated with altered brain function during a memory task**

Pauline M. Maki, PhD, Minjie Wu, PhD, Leah H. Rubin, PhD, Deanne Fornelli, PA, Lauren L. Drogos, PhD, Stacie Geller, PhD, Lee P. Shulman, MD, Suzanne Banuvar, MHSA, Deborah M. Little, PhD, and Rhoda J. Conant, MD

*Preliminary data suggest that vasomotor symptoms may contribute to memory performance through effects on the hippocampus and prefrontal cortex. Larger studies are warranted to determine the robustness of these initial observations.*

278

**Trajectory analysis of sleep maintenance problems in midlife women before and after surgical menopause: the Study of Women's Health Across the Nation (SWAN)**

Howard M. Kravitz, DO, MPH, Karen A. Matthews, PhD, Hadine Joffe, MD, MSc, Joyce T. Bromberger, PhD, Martica H. Hall, PhD, Kristine Ruppert, Dr.PH, and Imke Janssen, PhD

*Sleep maintenance problems were relatively stable across time post-surgery. These data are remarkably consistent with trajectory results across the natural menopause, suggesting that pre-surgical assessment of sleep concerns could help guide women's expectations post-surgically.*

289

SDC

**"I want to feel like I used to feel": a qualitative study of causes of low libido in postmenopausal women**

Holly N. Thomas, MD, MS, Megan Hamm, PhD, Rachel Hess, MD, MS, Sonya Borrero, MD, MS, and Rebecca C. Thurston, PhD

*Postmenopausal women reported a number of different factors contribute to low libido, including postmenopausal vaginal symptoms, erectile dysfunction in male partners, fatigue and bodily pain, life stressors, and body image concerns. Women often found ways to adapt to these factors, but adaptations require open communication between partners regarding sex, and some women noted these conversations were difficult or not successful.*

295

SDC

**Effects of menopause on sleep quality and sleep disorders: Canadian Longitudinal Study on Aging**

Sheida Zolfaghari, MD, Chun Yao, MSc, Cynthia Thompson, PhD, Nadia Gosselin, PhD, Alex Desautels, MD, PhD, Thien Thanh Dang-Vu, MD, PhD, Ronald B. Postuma, MD, MSc, and Julie Carrier, PhD

*Menopause is associated with increased sleep-onset insomnia. Postmenopausal women also are more likely to screen positive for obstructive sleep apnea. However, menopausal status is not associated with sleep-maintenance, somnolence, or restless leg syndrome, and rapid eye movement sleep behavior disorder.*

305

OPEN

SDC

**Menopausal hormone therapy, blood thrombogenicity, and development of white matter hyperintensities in women of the Kronos Early Estrogen Prevention Study**

Muthuvel Jayachandran, PhD, Brian D. Lahr, MS, Kent R. Bailey, PhD, Virginia M. Miller, PhD, and Kejal Kantarci, MD

*In recently menopausal women, the type of menopausal hormone therapy did not significantly influence the association of markers of blood thrombogenicity with development of white matter hyperintensities in the brain.*

311

**Menopause and risk of hip fracture in middle-aged Chinese women: a 10-year follow-up of China Kadoorie Biobank**

Ke Peng, MPH, Pang Yao, PhD, Christiana Kartsonaki, DPhil, Ling Yang, PhD, Derrick Bennett, PhD, Maoyi Tian, PhD, Liming Li, Yu Guo, MSc, Zheng Bian, PhD, Yiping Chen, DPhil, Zhengming Chen, DPhil, Rebecca Ivers, PhD, Mark Woodward, PhD, Robert Clarke, MD, on behalf of the China Kadoorie Biobank Collaborative Group

*In a study of 125,336 postmenopausal women who had a natural menopause, 1,327 incident cases of hip fracture were recorded during the first 10 years of follow-up. The study demonstrated that women with younger age at menopause, longer interval since menopause or shorter duration of total reproductive years had the highest risks of hip fracture.*

319

**Plasma levels of miR-30d-5p are decreased in regularly exercising postmenopausal women**

Tilen Kranjc, PhD, Marko Milojević, MSc, Tomaž Kocjan, MD, Mojca Jensterle, MD, Janja Marc, PhD, and Barbara Ostanek, PhD

*Plasma levels of hsa-miR-30d-5p were significantly lower in postmenopausal women with higher physical activity. Higher plasma levels of hsa-miR-21-5p and hsa-miR-93-5p were observed in the group with reduced sit-to-stand performance.*

326

**The effect of metformin on vertebral marrow fat in postmenopausal women with newly diagnosed type 2 diabetes mellitus**

Fang Lin, MS, Yuning Pan, MS, Yinwei Zhang, MS, and Qiang Zhou, BS

*Postmenopausal women with newly diagnosed type 2 diabetes mellitus (T2DM) have a higher marrow fat content compared to nondiabetic women. Metformin treatment reduced marrow adiposity in T2DM.*

333

**Design and psychometric analysis of a climacteric adjustment questionnaire for middle-aged women**

Mitra Reyhani, PhD, Ashraf Kazemi, PhD, Ziba Farajzadegan, PhD, and Mahrokh Keshvari, PhD

*The findings of the present study indicated that the validity and reliability of the questionnaire designed to measure adjustment to the climacteric period in middle-aged women could be used in related studies.*

**Review Articles**

---

339

**Safety of vaginal estrogens: a systematic review**

Carolyn J. Crandall, MD, MS, FACP, Allison Diamant, MD, MSHS, and Nanette Santoro, MD

*In this systematic review of clinical trials, newer low-dose estradiol rings, tablets, and inserts appear to induce the least increases in serum hormone levels, possibly indicating greater safety. Limited evidence in trials lasting up to 52 weeks suggest endometrial safety of vaginal estrogen use, but long-term trials are needed.*

**SDC**

OPEN

361

### Systemic estradiol levels with low-dose vaginal estrogens

Richard J. Santen, MD, Sebastian Mirkin, MD, Brian Bernick, MD, and  
Ginger D. Constantine, MD

*Low-dose vaginal estrogen, used to treat moderate to severe postmenopausal dyspareunia and vulvar and vaginal atrophy, results in variable amounts of systemic absorption of estradiol, which are based on the product, dose, formulation, and/or placement in the vagina. Accurate measurement of the systemic levels of estradiol in postmenopausal women requires a detection assay with high sensitivity and specificity.*

## Clinical Corner

---

### NAMS Practice Pearl

---

371

### Taking a fresh look at mood, hormones, and menopause

Claudio N. Soares, MD, PhD, FRCPC, MBA

*Midlife depression is influenced by both menopause- and nonmenopause-related factors. Clinicians should consider all available options to best determine individualized treatments for symptomatic midlife women. The prophylactic use of hormone therapy against depressive symptoms during the menopause transition is promising, but its broader adoption will depend on further studies and larger trials to confirm the efficacy and safety of such an approach.*

## Letter to the Editor

---

374

Wolters Kluwer Health, Inc., and The North American Menopause Society cannot be held responsible for errors or for any consequences arising from the use of the information contained in this journal. All advertising material published in this journal is expected to conform to regulatory and medical standards. The appearance of advertising in this publication does not constitute a guarantee or endorsement by The North American Menopause Society or Wolters Kluwer Health, Inc., of the quality or value of such a product or service or any claims made by its marketer.

Permissions and photocopying: For permission and/or rights to use content for which the copyright holder is Wolters Kluwer or the society we have partnered with the Copyright Clearance Center to provide permissions for our products through their RightsLink service, please go to the journal's website and after clicking on the relevant article, click on the "Get Content & Permissions" link under the "Article Tools" box that appears on the right side of the page. For questions about the Rightslink service, e-mail [customer-care@copyright.com](mailto:customer-care@copyright.com) or call 877-622-5543 (U.S. Only) or 978-777-9929. Permissions FAQs and information on author's permission requests are available at <https://shop.lww.com/journal-permission>. For additional permission inquiries, please contact [Permissions@LWW.com](mailto:Permissions@LWW.com). For translation rights requests, contact [TranslationRights@wolterskluwer.com](mailto:TranslationRights@wolterskluwer.com). For license to republish and distribute requests, contact [HealthLicensing@wolterskluwer.com](mailto:HealthLicensing@wolterskluwer.com). For special projects and reprints (U.S./Canada), contact Alan Moore at [Alan.Moore@wolterskluwer.com](mailto:Alan.Moore@wolterskluwer.com) or [reprintsolutions@wolterskluwer.com](mailto:reprintsolutions@wolterskluwer.com). For special projects and reprints (non-U.S./Canada), contact Avia Potashnik at [Avia.Potashnik@wolterskluwer.com](mailto:Avia.Potashnik@wolterskluwer.com) or [International-Reprints@wolterskluwer.com](mailto:International-Reprints@wolterskluwer.com).  
*Menopause: The Journal of The North American Menopause Society* is a registered trademark of The North American Menopause Society.

**Menopause: The Journal of The North American Menopause Society** (ISSN 1072-3714) is published monthly by Wolters Kluwer Health, Inc., at 14700 Citicorp Drive, Bldg 3, Hagerstown, MD 21742. Business offices are located at Two Commerce Square, 2001 Market St., Philadelphia, PA 19103. **Annual subscription rate:** \$610.

Copyright © 2020 by The North American Menopause Society. All rights reserved. Printed in the USA.