Editorials

597
The Women’s Health Initiative: an unforgettable decade
Lubna Pal, MBBS, MRCOG, MS and JoAnn E. Manson, MD, DrPH, NCMP

600
Hormone therapy prescribing trends in the decade after the Women’s Health Initiative: how patients and providers have found a way to sleep better at night
Jennifer A. Corbelli, MD and Rachel Hess, MD, MS

602
Transdermal and vaginal estradiol for the treatment of menopausal symptoms: the nuts and bolts
Andrew M. Kaunitz, MD

604
Effects of estrogen on vaginal innervation: denervation or remodeling?
George I. Gorodeski, MD, MSc, PhD

606
Bone density: a surrogate for estrogen exposure or a systemic inflammatory disorder?
Stanley J. Birge, MD

608
Is there any reason to suspect that the determinants of mandibular bone mineral density might differ from those of systemic skeletal bone mineral density?
Edward B. Seldin, DMD, MD

(continued)
Original Articles

610
Evolution of postmenopausal hormone therapy between 2002 and 2009
Bruce Ettinger, MD, Sharon M. Wang, PharmD, MS, R. Scott Leslie, MPH, Bimal V. Patel, PharmD, MS, Michael J. Boulware, PhD, Mark E. Mann, BS, and Michael McBride, BA
Between 2002 and 2009, 70% fewer hormone therapy prescription claims were received by a large pharmacy benefits management organization. Lower dosage and transdermal hormone therapy options have taken a larger share of prescribed hormone therapy.

616
A decade of postmenopausal hormone therapy prescribing in the United States: long-term effects of the Women’s Health Initiative
Amy R. Steinkellner, PharmD, Shannon E. Denison, MA, Sandra L. Eldridge, PharmD, Lisa L. Lenzi, PharmD, William Chen, PhD, MPH, and Steven J. Bowlin, DO, PhD
This large population-based study describes changes in menopause hormone therapy prescribing in the United States, including dose, formulation, patient age, and prescriber specialty, over a 10-year period.

622
Transdermal estradiol gel for the treatment of symptomatic postmenopausal women
David F. Archer, MD, James H. Pickar, MD, Dipali C. MacAllister, PharmD, and Michelle P. Warren, MD
The effects of two different concentrations of a transdermal estradiol gel on hot flushes and vaginal cytology were evaluated in separate clinical trials. Reductions in hot flush frequency and severity, shifts to higher vaginal maturation value, and the percentage of participants having a response were significant with 0.06% estradiol applied daily to the arm.

630
Systemic and topical hormone therapies reduce vaginal innervation density in postmenopausal women
Tomas L. Griebling, MD, MPH, Zhaohui Liao, MD, and Peter G. Smith, PhD
This study showed that systemic or topical estrogen reduces numbers of vaginal sensory and autonomic axons in postmenopausal women, raising the possibility that changes in innervation may contribute to some menopausal symptoms.

636
Association between cognitive impairment and bone mineral density in postmenopausal women
Dong-Yun Lee, MD, Duk L. Na, MD, Sang Won Seo, MD, Juhee Chin, MA, Seung-Jae Lim, MD, DooSeek Choi, MD, Yong-Ki Min, MD, and Byung-Koo Yoon, MD
Cognitive impairment is significantly associated with lower bone mineral density in postmenopausal women. This finding suggests that estrogen deficiency may be one of the contributing factors to cognitive aging.
Relationship between bone turnover biomarkers, mandibular bone mineral density, and systemic skeletal bone mineral density in premenopausal and postmenopausal Indian women

Annu Makker, PhD, Man Mohan Singh, PhD, DSc, FNASc, Geetanjali Mishra, PhD, Balendra Pratap Singh, MDS, Girish Kumar Jain, PhD, and Satyawan Jadhav, PhD

Best fit model was obtained to demonstrate predictors of mandibular bone mineral density (mBMD) in premenopausal and postmenopausal Indian women. Screening for biomarkers should be useful to assess mBMD status.

Androstenediol complements estrogenic bioactivity during the menopausal transition

Bill L. Lasley, PhD, Jiangang Chen, PhD, Frank Z. Stanczyk, PhD, Samar R. El Khoudary, PhD, MPH, Nancy A. Gee, BS, Sybil Crawford, PhD, and Daniel S. McConnell, PhD

Androstenediol contributes to circulating estrogenicity when estradiol production falls at menopause and may contribute significantly to the endocrine changes experienced by midlife women.

Menopausal transition stage–specific changes in circulating adrenal androgens

Daniel S. McConnell, PhD, Frank Z. Stanczyk, PhD, MaryFran R. Sowers, PhD, John F. Randolph Jr, MD, and Bill L. Lasley, PhD

Changes in circulating steroid hormone emanating from the adrenal during the menopausal transition may be more important than the decline in ovarian function in terms of altering the estrogen-androgen balance.

Laboratory and ambulatory evaluation of vasomotor symptom monitors from the Menopause Strategies Finding Lasting Answers for Symptoms and Health network

Janet S. Carpenter, PhD, RN, FAAN, Katherine M. Newton, PhD, Barbara Sternfeld, PhD, Hadine Joffe, MD, MSc, Susan D. Reed, MD, MPH, Kristine E. Ensrud, MD, MPH, FACP, and Jennifer L. Milata, MSN, RN

This three-phase study evaluated vasomotor symptom monitoring devices under laboratory and ambulatory conditions. Problems encountered and agreement between event-marked and monitor-recorded vasomotor symptoms are reported.
Early postmenopausal women with cardiovascular risk factors improve microvascular dysfunction after acute estradiol administration
Ruth Clapauch, MD, PhD, Anete S. Mecenas, BSc, Priscila A. Maranhão, BSc, MSc, and Eliete Bouskela, MD, PhD
Before estradiol administration, hypertensive and diabetic women who presented with impaired microvascular dilatation and compliance underwent nailfold videocapillaroscopy; after estradiol administration, they recovered microvascular endothelial-mediated dilatation, reaching similar absolute values compared with controls, although irreversible microvascular stiffness remained.

Exogenous estrogen protects mice from the consequences of obesity and alcohol
Valerie B. Holcomb, PhD, Jina Hong, PhD, and Nomeli P. Núñez, PhD
The effects of obesity, alcohol, and exogenous estrogen on tumor growth and fatty liver were determined using a Wnt-1 allograft breast cancer model. Exogenous estrogen protects against obesity and is associated with inhibition of tumor growth and fatty liver.

Effect of aerobic training on menopausal symptoms—a randomized controlled trial
Jaana M. Moilanen, MSc, Tomi S. Mikkola, MD, Jani A. Raitanen, MSc, Reetta H. Heinonen, MSc, Eija I. Tomas, MD, Clas-Håkan Nygård, PhD, and Riitta M. Luoto, MD
In this randomized controlled trial, aerobic training decreased night sweats, mood swings, and irritability in recently postmenopausal, symptomatic women with a sedentary lifestyle. Information on symptoms was collected daily for 6 months by using mobile phone technology.

Treatment with hormone therapy and calcitriol did not affect depression in older postmenopausal women: no interaction with estrogen and vitamin D receptor genotype polymorphisms
Vinod Yalamanchili, MBBS and J. Christopher Gallagher, MD
This study analyzed the long-term effect of hormone therapy, calcitriol, and the combination of both treatments on depression using logistic regression. There was no effect of treatment, nor was there any association between depression and vitamin D receptor and estrogen receptor α genotype polymorphisms.
Women with low bone mineral density and dental panoramic radiography

Johelle Santana Passos, DDS, MSc, Isaac Suzart Gomes Filho, DDS, MSc, PhD, Viviane Almeida Sarmento, DDS, MSc, PhD, Daiane Silva Sampaio, DDS, Fernanda Pedreira Gonçalves, DDS, Julita Maria Freitas Coelho, DDS, MSc, PhD, Simone Seixas Cruz, DDS, MSc, PhD, Soraya C. Trindade, DDS, MSc, PhD, and Eneida M. Cerqueira, DDS, MSc, PhD

The evaluation of panoramic radiography may be useful for confirming individuals who present with low bone mineral density.

Letters to the Editor

710