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The benefit of hormone therapy for lowering bone fracture risk of postmenopausal women in Korea: Analysis of the Korean National Health Insurance Service database

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Objective: In menopausal woman, bone loss with aging worsens rapidly and the risk of osteoporotic fracture increases. Hormone therapy (HT) has been studied to be effective in prevention of postmenopausal osteoporosis and fractures. Therefore, this study aims to investigate the effect of HT on fractures in large cohort of Korean menopausal women.

Methods: The study included women over 50 years old who were diagnosed with menopause from 2004 to 2007. Patients who had history of cancer, stroke, myocardial infarction, or who received hormonal treatment less than 1 year were excluded. We evaluated the impact of 3 HT regimens: estrogen/progestogen, estrogen only, tibolone only, and control group consisting of patients who received no HT. We analyzed the effect of HT on fracture risk of the spine, radius and tibia. Additionally, we performed subgroup analysis by age stratification.

Result: Compared to the control group, the hazard ratio of spine, radius, tibia fracture was significantly lower in HT group (spine: HR=0.338; 95% CI 0.281-0.407, p=<.0001 radius: HR=0.37; 95% CI0.256-0.537, p=<.0001 tibia: HR=0.443; 95% CI 0.303-0.649., p=<.0001). Analyzing 3 different HT regimen groups respectively, all group had risk reducing effect compared to control group.

Conclusion: According to our large cohort study of Korean menopausal women, the HT group had definite benefit for lowering bone fracture risk compared to the control group and fracture risk was significantly reduced in all 3 groups of HT regimen, respectively. Therefore, HT may serve as effective treatment for prevention of menopausal osteoporosis and osteoporosis-related fractures in Korean women.
Effects of hormone therapy on blood pressure in postmenopausal hypertensive women: a randomized, placebo-controlled trial

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Background & Objective: Menopausal hormone therapy, if initiated early after menopause, prevents coronary heart disease (CHD) and hypertension (HTN) is a major risk factor for CHD. In contrast to oral administration, transdermal estrogen decreases 24-hour ambulatory blood pressure (BP, mmHg) regardless of baseline BP and we previously reported that micronized progesterone (MP4) had a beneficial effect on BP. The purpose of this study was to evaluate the impact of percutaneous estradiol (E2) gel (0.1%, 1 mg/day) and MP4 (100 mg/day) in postmenopausal women with mild HTN (systolic BP; 140-159 or diastolic BP; 90-99 mmHg). Primary and secondary end points were 24-hour ambulatory BP and arterial stiffness, respectively.

Subjects & Methods: Fifty-two participants were randomized to placebo (n = 16), estrogen only (ET, n = 19), or estrogen and progesterone therapy (EPT, n = 17). We measured the 24-hour ambulatory BP and brachial-ankle pulse-wave velocity (PWV) at baseline and 12 weeks. One women in ET group dropped during the study and we analyzed the data from a total of 51.

Results: Age of all participants was 57.3 ± 4.9 (mean ± SD) years. The baseline characteristics did not differ between groups except in dyslipidemia prevalence. After 12 weeks, differences in 24-hour ambulatory BP between the three groups did not differ. Within-group analysis showed that the heart rate (HR, beats/min) decreased at daytime in EPT group, compared to baseline (76.6 ± 7.8 vs. 74.1 ± 7.4, p < 0.05). Differences in aortic BP were similar among the three groups. In comparison to baseline, aortic diastolic BP was decreased in the ET group (87.7 ± 6.0 vs. 82.1 ± 10.3, p < 0.05). Differences in PWV were not different, but multivariate linear regression analysis demonstrated that PWV was different between the three groups (p = 0.017). PWVs in both ET and EPT groups were significantly different from placebo, but there was no difference between ET and EPT groups. Within-group analysis showed that PWV (cm/second) decreased from baseline in EPT group (1537.9 ± 167.7 vs. 1488.9 ± 130.3, p < 0.05).

Conclusions: In postmenopausal women with mild HTN, percutaneous E2 gel did not change ambulatory BP, but significantly decreased PWV. Moreover, MP4 had no influence on estrogen effects on ambulatory BP and PWV.
Comparison of sexual problems and vaginal dryness symptoms according to the menopausal periods in Korean menopausal women

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Objective: To compare the prevalence and severity of the sexual problems and vaginal dryness symptoms among Korean menopausal women.

Methods: This cross-sectional study included 3,039 Korean women aged 45-65 years who attended routine health check at a single institution. Their results in Menopause Rating Scale (MRS) were used to assess sexual problems and vaginal dryness. Those symptoms were compared according to the menopausal period which was categorized into four groups including premenopause, early menopause (≤2 years from the last menstruation), mid-menopause (2-8 years), and late menopause (>8 years).

Results: The mean age of the participants was 52.90 ± 5.39 years. The prevalence of sexual problems and vaginal dryness were 67.7% and 55.9%, respectively. Among the eleven menopausal symptoms with moderate-to-severe intensity assessed by MRS, sexual problems were the most common symptoms experienced by 43.7% of all participants, followed by physical and mental exhaustion (39.2%), whereas the vaginal dryness accounted for 28.7%. The prevalence of moderate-to-severe sexual problems and vaginal dryness increased at the early menopausal period, and those were still higher at late menopausal period compared to the level at the premenopausal period. Overweight was a protective factor of vaginal dryness after adjusting for other confounding variables.

Conclusion: Sexual problems and vaginal dryness were highly prevalent and severe in the middle-aged Korean women. Their prevalence increased after menopause, and that of the moderate-to-severe symptoms remained high until the late menopausal period. More attention is warranted to manage those symptoms for elderly women.
Basic characteristics of Korean premature ovarian insufficiency patients; a single center experience

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Premature ovarian insufficiency (POI) refers to becoming menopausal state before the age of 40. There are genetic, autoimmunologic and other various factors that cause POI. Incidence of spontaneous POI is approximately 1 in 250 by age 35, and 1 in 100 by age of 40.
There were a lot of studies about POI, but mostly based on U.S. patients and domestic data has been unavailable.

Objectives: To identify basic characteristics of POI patients in Korea.

Materials and methods: This was a retrospective study carried out in Asan Medical Center, Korea. From 1, January 2000 to 31, December 2016, under 40-year-old women with amenorrhea who finally diagnosed as POI were enrolled. The diagnosis was based on clinical symptoms and laboratory results. Moreover, patient’s age, body mass index (BMI), Tanner stage, karyotype, and type of treatment were collected and analyzed.

Results: Total 90 patients were finally diagnosed with POI. Primary amenorrhea were 31 (34.4%), and secondary amenorrhea were 59 (65.6%). Average age of diagnosis was 21.46 years old: 18.58 years old for primary amenorrhea and 22.96 years old for secondary amenorrhea. Average Body mass index (BMI) of overall patients was 21.39 and there was no significant difference between primary and secondary amenorrhea. The average laboratory results of follicle stimulating hormone (FSH) & Estradiol (E2), which is the indicator of diagnosis, is 61.34±26.6, 25.45±29.37, respectively. The results of anti-müllerian hormone (AMH) were collected in 41 patients (among 90), and the average was 0.12±0.23. Karyotype test was performed in 77 patients and the rate of abnormal karyotype including 46XY, 45 X, and others is higher in primary amenorrhea compared to secondary amenorrhea. 91.1% (82) of patients were prescribed hormone replacement.

Conclusions: In present study, we analyzed the basic characteristics of Korean POI patients in a single tertiary center. For understanding POI and giving an appropriate approach, further investigation of national data will be needed.
The fractional CO₂ laser in Korea: an effective treatment option for genitourinary syndrome of menopause

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Objectives: The genitourinary syndrome of menopause (GSM), previously known as vulvovaginal atrophy or atrophic vaginitis is associated with bothersome symptoms in menopausal women such as genital symptoms (dryness, burning, and irritation) and urinary symptoms (urgency, dysuria, and recurrent urinary tract infections). Moreover, it leads to sexual dysfunction (lack of lubrication, discomfort or pain, and impaired function). These are related to a decreased estrogen level in menopause that results in modification of urogenital epithelial layer, reducing vasculraization and lubrication. Also, change occurs in the contents of collagen and elastin fiber structure caused by low estrogen level. The GSM may have a negative impact on the quality of life of perimenopausal and postmenopausal women, and it should be treated with an appropriate therapy. This study is aimed to evaluate the efficacy of fractional CO₂ laser in the treatment of GSM.

Methods: Each patient received three laser applications with the fractional microablative - CO₂ laser (Smart Xide2; V2LR Monnalisa Touch System, DEKA Florence, Italy) at an interval 4 weeks between sessions: baseline (T1), 4 weeks follow up (the second laser, T2), 8 weeks follow up(the third laser, T3) and 12 weeks follow up(T4). The severity of symptoms was assessed with a visual analog scale(VAS) score at the baseline and every visit. We also measured the objective scale of the GSM using the vaginal health index score(VHIS) and perineometer at baseline and after completion of laser procedure. The purpose of perineometer mesurements was to assess the beneficial effects of laser therapy on pelvic floor muscle. At each procedure, patient’s subjective pain in VAS score and the physician’s difficulty was recorded at each time. At last visit, the patients evaluate their satisfaction with the laser therapy using a 5 points Likert scale.

Results: Forty four women were eligible to be included in the study. It was the final 30 women who finished all study protocol and ended follow up observations a month later. 8 women were absent from the last observation only after completing the treatment course. 24/30 patients were diagnosed breast cancer. In our study, almost all symptoms showed the mean VAS score improvement. The VHIS increased significantly after the completion of the treatment. (8.9±3.2 at baseline vs. 16.83±3.1 : p <0.001). Each component of VHIS (elasticity, fluid volume, vaginal pH, epithelial integrity, vaginal moisturization: p <0.001) was also significantly improved. After two times laser application, the VHIS improved significantly (p <0.001) with a further improvement
after the last laser treatment. Between the T3 and T4, only the changes in fluid volume and moisture were significant. At last, the average of satisfaction was 4.3/5. 13 patients were very satisfied, 13 were satisfied. 4 were uncertain with the fractional CO2 laser procedure. No patient described intra or post-procedure complications with the exception of 3 patients. One of them complained of an increase in vaginal discharge. 2 women reported mild pain lasting 1 to 2 days, but none were discontinued due to the occurrence of adverse events.

**Conclusion:** This study shows that fractional CO2 laser treatment is effective in patients who suffering from genitourinary syndrome of menopause. Further studies should be performed to confirm the results and to assess the long-term effects of the laser therapy.