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HORMONE REPLACEMENT THERAPY IMPROVES POSTURAL BALANCE FUNCTION IN MENOPAUSAL WOMEN

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To study possible effects of HRT on postural balance function, 100 women (on average 52.6 years and 34 months since last menstrual period) were randomly assigned either to sequential HRT or non-treatment for 3 months, thereafter all were on HRT up to 6 months.
Postural balance (sway velocity), was measured by static posturography before and after blind-folding and application of vibration stimulus (20-100Hz) on the calf muscles to induce imbalance.
After 3 months, sway velocity in estrogen users had decreased (improved) ($p = 0.008$) for the frequencies (20-100Hz) combined and differed from that in non-users ($p = 0.048$). In estrogen users, sway velocities were consistently lower for all and significantly so for most of the separate frequencies ($p = 0.01$-0.004). During continued estrogen exposure up to six months sway velocity further improved for the frequencies combined, ($p = 0.0000006$), as for the separate frequencies, ($p = 0.03$-<0.000002). This may suggest that more than three months of estrogens exposure is needed to get maximum effects on sway velocity.
We conclude that the fracture protective effect of HRT may be partially mediated through effects on postural balance function. This mechanism may explain the rapid increase in forearm fracture incidence early after menopause and the rapid dynamic between estrogen exposure and hip fracture protection.

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BONE LOSS IN WOMEN OVER 60 YEARS PREVENTED BY ULTRA-LOW DOSES OF 17-ß ESTRADIOL

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To study possible effects of ultra-low doses of 17-ß estradiol on bone metabolism and bone mass 30 healthy women, 60 years and older, were randomly assigned to a 6-month trial with either an ultra-low dose of parenteral estradiol (7.5 µg/24h) delivered by vaginal rings (Oestring®), or no treatment in the proportion 2:1.
Forearm bone mineral density (BMD) increased in estradiol users by 2.1% (95%CL: 0.4, 3.8), $p=0.008$), contrasting to a decrease in non-users of -2.7% (-5.9, 0.4), $p=0.077$. In repeated measurement analysis, the changes in the two study groups differed significantly ($p=0.0004$). Consistent with these changes, serum alkaline phosphatases, bone specific alkaline phosphatases and osteocalcin decreased in the treatment group (8%, $p=0.019$, 14%, $p=0.0006$ and 9%, $p=0.02$, respectively), suggesting a reduced bone turnover. No significant changes were found in non-users.
These data indicate that ultra-low doses of parenteral 17-ß estradiol, barely affecting the serum estradiol levels and not necessitating addition of a progestogen, may affect bone loss in elderly women. Low-dose regimens, having few side effects, may potentially enhance the otherwise poor compliance with therapies involving conventional doses and regimens.

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THE EFFECTS OF SURGICAL MENOPAUSE AND PARENTERAL HORMONE REPLACEMENT THERAPY ON BONE DENSITY, MENOPAUSAL SYMPTOMS AND HORMONE PROFILES.

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The aims were to compare bone density (BD), hormone profiles and menopausal symptoms in premenopausal oophorectomised women treated with either transdermal oestradiol patches or subcutaneous implants.
Forty five premenopausal women undergoing TAH BSO were randomised to receive either oestradiol implants (50mg), oestradiol patches (50ug/24hrs) or oestradiol (50mg) and testosterone (100mg) implants. Vertebral BD was measured preoperatively and after 1 year of treatment. Oestradiol, testosterone and gonadotrophins were measured preoperatively and at 2 monthly intervals and at each visit menopausal symptoms were assessed by means of a questionnaire. There was a significant decrease in BD in women treated by oestradiol patch (preop BD 331.9mg/cm^3, BD at 1 year 317.8mg/cm^3, $p<0.005$). There were no changes in BD in the implant groups. Oestradiol levels in the patch group were significantly lower than in the implant groups at 6, 8 and 12 months ($p<0.05$) and gonadotrophins significantly higher ($p<0.001$). There were no differences in the symptom scores between the groups.
This study shows that in the doses studied oophorectomised women treated with implants maintained BD, whereas those on patches lost bone. Lower oestradiol concentrations achieved with the patch may account for these findings. Short term menopausal symptoms were relieved in all three groups.

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BASELINE CHARACTERISTICS DO NOT AFFECT THE RESPONSE TO RALOXIFENE HYDROCHLORIDE IN JAPANESE WOMEN WITH OSTEOPOROSIS.

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We evaluated the hypothesis that response to treatment with raloxifene, a selective estrogen receptor modulator (SERM), might be predicted by anthropamorphic characteristics or baseline bone turnover rate. This was assessed in a 24-week, prospective, randomized study of Japanese postmenopausal women with osteoporosis (lumbar bone mineral density <2.0 S.D. below peak bone density). Placebo or raloxifene hydrochloride (30 mg/d or 90mg/d) was administered with 800 mg of calcium lactate each day. Biochemical markers of bone turnover [serum osteocalcin (OC), serum tartrate-resistant acid phosphatase (TRAP), urinary deoxypyridinoline/Cr (DPYR) and serum lipids (total, low density lipoprotein (LDL), and high density lipoprotein (HDL) cholesterol] were measured at baseline and after 4, 8, 12 and 24 weeks of treatment. Lumbar (L2-L4) bone mineral density was determined by DXA at baseline and after 12 and 24 weeks.

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