The addition of an androgen to oestrogen replacement therapy may modify the cardiovascular protective effects of oestrogen. We have studied this prospectively in hysterectomised postmenopausal women by measuring changes in body mass index (BMI), lipid profiles and insulin resistance in twenty women receiving a 50mg(E50) oestradiol implant and after 4 months the combination of 50mg oestradiol and 100mg testosterone(T100) implants. In addition we compared these indices in twenty women who had been on E50 & T100 for 5 or more years with matched controls who have been on E50 only for a similar period.

Fasting bloods were taken at baseline and 8 weekly intervals in order to determine oestradiol, testosterone. Free androgen index(FAI), insulin resistance (as determined by fasting glucose x insulin/25), cholesterol, triglycerides, HDLc, LDL, ApoA, ApoB and Lp(a) levels. There were no significant changes in BMI over the 8 months. Oestradiol levels increased significantly from 56pmol/l at baseline to 347pmol/l (p<0.05) and then to 512pmol/l by the last visit. The FAI dropped from 1.8 to 1.6 on E50 and then increased to 9.5 on E50+T100 (p<0.05).

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THE RELATIVE CONTRIBUTIONS OF AGING AND MENOPAUSE IN DETERMINING INVOLUTATIONAL OSTEOPENIA

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Bone mineral density (BMD) was measured in normal postmenopausal women (PMW) by dual energy x-ray absorptiometry (DEXA) either at the lumbar spine (n=2190) or femur (n=680). Vertebral BMD decreased with age (r=0.25), but the relation with years since menopause (YSM) was more potent (r=0.36). BMD shows a rapid and highly significant (P<0.0001) decrease first 5 YSM. The Vertebral BMD values were regressed on the logarithmic transformation of YSM (r=0.44, p<0.0000). The age-related component account for a linear 0.4% decrease per year, starting at the age of 55. In 139 pairs of PMW up to and over 60 yrs of age (58±1.9, and 62.5±1.5 yrs, respectively), matched for YSM (10.3±2.3), no significant differences in height, weight, or BMI were found. The lumbar BMD was significantly (P<0.001) lower in the younger than in older PMW. BMDs decreased with age in all femoral regions, but the relations with YSM were more potent. In 64 pairs of PMW up to and over 60 yrs of age (56.8±2.6, and 64.8±2.9 yrs, respectively), matched for YSM (10.3±2.3 yrs), no significant differences in height, weight or BMI were found. The femur BMDs were significantly (P<0.001) lower in the younger than in older women. Thus, besides the BMI, the menopausal component of bone loss and a younger age at the menopause represent the major determinants of the involutional lumbar and femoral osteopenia.