

Osteoporosis prevention

Sir,

I read with interest M Rodgers and J E Miller's report (March *Journal*) on 45 postmenopausal women using transdermal oestradiol replacement therapy, 24 (53%) of whom had serum oestradiol levels below 150 pmols/l.¹ The authors infer that these women were given inadequate hormone replacement therapy (HRT) to protect against osteoporosis, and that serum oestradiol measurement is a suitable monitor for the adequacy of HRT for bone protection between bone mass measurements.

The effect of oestrogen on bone metabolism is complex, partly influencing bone remodelling and partly through stimulation of prostaglandins and calcitonin.² Lindsay suggests that mid-follicular oestrogen levels are probably sufficient,³ but a minimum bone-sparing level has not been suggested. Lindsay also suggests that progestogens enhance the skeletal effects of oestrogen. Abdalla *et al* have shown norethisterone to be bone-sparing.⁴ The authors of this paper report 34 women with an intact uterus; presumably these will have been co-prescribed progestogen. Oestradiol measurement cannot assess progestogenic effect.

Thirty-seven women were using transdermal patches of 50 µg of oestradiol or above. Seventeen of these had serum oestradiol levels of less than 150 pmol/l. Numerous trials have shown these doses to be bone-sparing when measured by a DEXA scan. Hillard *et al*⁵ reported increased spinal and femoral bone density with three years continuous use of transdermal 17 beta-oestradiol 0.05 mg/day, and biochemical markers indicated a significant reduction in bone turnover.

Most women reported were using reservoir patches, which are known to have problems with adhesion and skin reaction,

which, in turn, may reduce effective absorption. The newer matrix patches have fewer problems of this nature; absorption is good and skin reactions are low. No women were reported using percutaneous oestradiol gel. Various authors have reported good bone protection with doses of 2.5–5 g/day when measured by DEXA; Tremollieres *et al* showed bone protection with serum oestradiol levels at the start of the follicular phase.⁶

Bone densitometry is the gold standard monitor of bone-sparing therapy. We are tempted to look for other treatment monitors because few GPs have direct access. Studies show that transdermal oestrogen by patch, at or above 50 µg/day, and percutaneous gel, at or above 1.5 g/day (standard dose = two measures once a day), are bone-sparing. Individual serum levels cannot measure bone activity, nor can they monitor the effect of other co-prescribed therapies such as progestogen or calcium and vitamin D3. We must continue to press for proper access to bone densitometry.

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Deprivation payments and workload

Sir,

Recent papers have raised issues about the validity¹ and adequacy² of deprivation payments introduced in the 1990 contract, which were based on an underprivileged area score originally derived from eight census factors subjectively perceived by GPs as most affecting their workload.³ The assumption that doctor workload increases with patients' deprivation has been questioned,⁴ and we were able to test this by correlating deprivation payments with the results of a workload study carried out in 1991.⁵

In 1991, deprivation payments were based on the 1981 census, but in 1995 these were based on the 1991 census, which was undertaken at the same time as the workload study. For 100 GPs working full time in Sheffield in 1991, the number of hours worked per week providing general medical services (mean = 42.1 hours), and the total number of patients seen per week (mean = 166) in 1991, were correlated (Table 1) with the proportion of patients on their lists who lived in wards qualifying for deprivation payment in 1991 from the 1981 census (mean = 0.16) and in 1995 from the 1991 census (mean = 0.31). As would be expected, there were significant correlations between weekly workload and number of patients seen. But there were consistent negative correlations between the two estimates of

Table 1. Correlation coefficients for 100 general practitioners.

	Proportion of patients attracting deprivation payments in 1991 (1981 census/1991 list size)	Proportion of patients attracting deprivation payments in 1995 (1991 census/1995 list size)	Mean hours per week general medical services workload in 1991
Proportion of patients attracting deprivation payments in 1995 (1991 census/1995 list size)	0.7783 P = 0.000		
Mean hours per week general medical services workload in 1991	-0.1197 P = 0.236	-0.0627 P = 0.536	
Mean numbers of patients seen per week in 1991	-0.1497 P = 0.137	-0.0940 P = 0.352	0.4145 P = 0.000

NB: Spearman's rank order coefficient used. P values for 2-tailed test of significance. Low and medium deprivation payments counted the same (no high payments). Numbers of patients includes those seen in surgery, in clinics, and at home.