

Quantitative Ultrasound Measurements Detect Skeletal Changes in Cortical Bone Following HRT use.

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The use of HRT in postmenopausal women for the prevention of osteoporosis is a well-recognised and effective treatment. DXA at present is commonly used both to diagnose osteopenia and osteoporosis and to monitor therapeutic responses. This preliminary study investigated the ability of QUS measurements at the radius and tibia to differentiate between subjects receiving HRT and age matched controls. The Sunlight Omnisense™ (Rehovot, Israel), which can measure the speed of sound (SOS) in bone at multiple sites was used to perform the measurements. A group of 60 subjects were recruited who had no history of drugs or diseases that effect bone metabolism, a normal menstrual history and no low trauma fractures. The group consisted of 25 premenopausal women (age 32 ? 5.2) and 35 postmenopausal women (age 56 ? 5.8). A further group of 21 women were recruited using the same criteria except for having received HRT for 1 or more years (age 55 ? 6.6, HRT years 5.33 ? 3.25). All subjects had QUS measurements of the radius and tibia and DXA of the lumbar spine and hip. T-scores were calculated using the 25 premenopausal women and used to calculate the T-scores for the postmenopausal and HRT groups. A t-test assuming unequal variances was performed to assess the significance of differences between the HRT subjects and the postmenopausal controls.

	T- Scores				
	QUS		L1-L4	DXA	T Hip
	Radius	Tibia		NOF	
PoMen	-1.25	-1.27	-0.78	-0.79	-0.56
HRT	-0.47	-0.10	-0.38	-0.63	-0.18
P value	0.03	0.0005	ns	ns	ns

Although the study groups were small, the results for the QUS measurements demonstrate significant differences between the subjects receiving HRT and the controls, results that did not reach statistical significance with DXA.

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