

OSTEOSCOOP

News on current events in osteoporosis and rheumatology

Quantitative ultrasound to predict fracture in older people

N° 100 – October 2009

Quantitative ultrasound has been shown to predict risk of fracture in various populations. However, this ability may be modified by the presence of previous fracture in very frail older people. The authors of a recent study [1] assessed bone strength by quantitative ultrasound (QUS) and clinical risk factors at baseline for 1 982 institutionalised older people. Fractures were ascertained for 2 years from baseline and validated by X-ray reports.

Study participants were very old (mean age=85.7±7.1 years) and frail (70% using walking aids). Forty-five percent reported a history of fracture. During a mean follow-up period of 1.64 years, 335 participants suffered a fracture or fractures. Fracture rates were significantly higher in participants with a history of fracture compared with those without a history of fracture (16.0 vs 9.2 per 100 person years, $P < 0.001$). Significant associations between fracture risk and QUS parameters (broadband ultrasound attenuation and velocity of sound) were observed among participants without a history of fracture (both $P < 0.01$), but not among those who had a fracture history.

The authors conclude that, in very frail older people, QUS measurements may be more useful for assessing fracture risk in those without a history of fracture after age 50.

1. Chen JS et al. *Osteoporos Int.* 2009;20:105–112.

Quantitative ultrasound to predict fracture in older people

Quantitative ultrasound has been shown to predict risk of fracture in various populations. However, this ability may be modified by the presence of previous fracture in very frail older people. Significant associations between fracture risk and velocity of sound or broadband ultrasound attenuation was observed among participants without a history of fracture (both $P < 0.01$), but not among those who had a fracture history.

ROLE OF QUANTITATIVE ULTRASOUND TO PREDICT FRACTURE				
Variable	Participants with a history of fracture		Participants without a history of fracture	
	IRR (95%CI)	p	IRR (95%CI)	p
Velocity of sound (m/s)		0.72		0.004
<1.543	1.15 (0.78-1.68)		1.94 (1.26-2.97)	
1.543-1.584	1.17 (0.78-1.73)		1.70 (1.13-2.56)	
≥1.584	1.00		1.00	
Broadband ultrasound attenuation (dB/MHz)		0.82		<0.001
<39.7	1.11 (0.77-1.60)		2.18 (1.43-3.37)	
39.7-58.9	1.02 (0.69-1.51)		1.91 (1.27-2.88)	
≥58.9	1.00		1.00	

IRR (incidence rate ratio) by method of negative binomial regression

 **PROTELOS**[®]
Treatment of postmenopausal osteoporosis to reduce the risk of hip and vertebral fractures

