OSTEOSCAN

PARTNERS IN OSTEOPOROSIS MANAGEMENT

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July 2012

Winter blues? Wish you were in far North Queensland or far South France? Why not liven up your day with a blast of exciting osteoporosis reading. We grasp the nettle of impact of ethnicity on BMD, present a challenging case of metabolic bone disease, and discuss the (much greater than you thought) prolonged action of zoledronate. We introduce you to our Audit program for general practice. The Osteoscan website provides additional educational material, including a very detailed discussion of CrossLaps, and previous newsletters. As always your feedback and support by way of referrals are highly appreciated.

DOES ETHNIC BACKGROUND AFFECT HOW BMD MEASUREMENT SHOULD BE INTERPRETED?

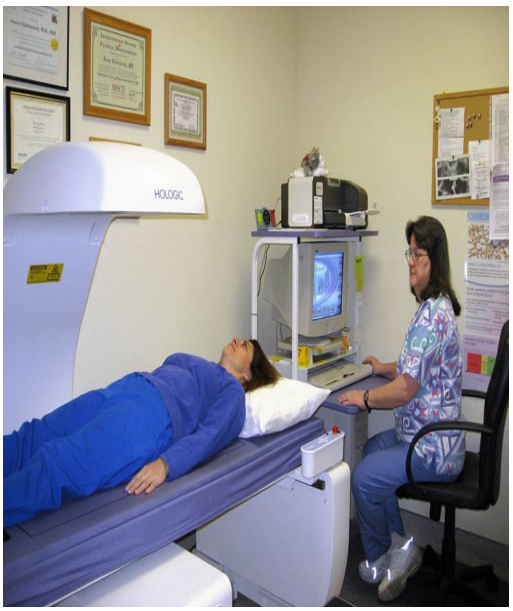
This question is commonly asked by referring doctors. It is hard to give a precise answer because of limited data. Chinese women have been reported to have lower BMD than Australian & North American Caucasians at most skeletal sites. These include the proximal femur and lumbar spine, which we routinely measure. Chinese values are typically 5 – 10% lower than those of Caucasians. Studies of Japanese and Indian women also suggest that their BMD values are lower. However, when body size and other potential confounding factors are taken into account (smaller individuals tend to have smaller bones, which affects the calculations made by DEXA machines), these differences appear to be small, or may even disappear.

Although some DEXA machines do have Asian reference databases, these are not as complete as those for Caucasians, and most experts agree that further research and better databases are required. What does this mean for each of us when we are trying to assess and treat a non-Caucasian patient? For patients who are deep into the osteoporotic or osteopenic ranges any differences between races are probably not significant. An Asian patient assessed as having borderline or mild osteopenia by Caucasian T-score standards may in fact have low normal BMD when compared with their peers. A key message here is that BMD alone does not provide the full picture, which is why Osteoscan places a strong emphasis on providing an integrated estimate of absolute fracture risk. A history of fractures, premature menopause, a history of falls, smoking, etc. have been validated as fracture risk factors in all studied racial groups. By combining these into an integrated assessment the possible issues with ethnicity and BMD are likely to be minimized.

ISOLATED INCREASE IN ALP - CASE STUDY

- A 48 year old man presented with lethargy and weight loss of 6 kg. Normal physical examination. The only laboratory abnormality was an isolated increase in ALP of 156 U/L (GGT 12 U/L).
- Other laboratory variables included corrected serum calcium 2.31 mmol/L (2.10 – 2.55), Vitamin D 80 nmol/L and PTH 4.5 pmol/L (0.8 – 5.5). ALP isoenzymes confirmed an increase in the bone fraction. Whole body nuclear bone scan was normal.
- Over the next 12 months the ALP varied from 131 – 156 U/L.

What is your diagnosis? (turn over for answer and discussion)



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Telephone Consultations

Wilton Braund and George Tallis are both practicing endocrinologists at EndocrineSA and are available to discuss patient management by telephone. This often occurs in the context of a situation too complicated to address in a standard report.

A consultation may be arranged by telephoning Lisa or Tara on 1300 791 996.

Practice Audits

It is estimated that only about 10% of the over-70s population have used the new Medicare item number to have screening BMD performed. It is similar in the United States where 87% of women > 65 years have never had BMD measured. From July 2012 Osteoscan will liaise with practices wishing to conduct audits of their over 70s patients and will provide a free VFA (Vertebral Fracture Assessment) as part of the BMD service. The pick-up rate for new fractures in this age group is about 20%.

Please contact Lisa on 1300 791 996 or email admin@osteoscan.com.au for further information about this service.

ANSWER TO THE CASE (previous page)

This is a case of coeliac disease. The relevant antibody testing was positive and the duodenal biopsy showed a severe mucosal lesion and subtotal villous atrophy. Subsequent BMD showed osteoporosis with T scores at the spine and hip respectively -2.7 and -1.7.

He was started on a coeliac diet and alendronate 40 mg weekly (he was a builder with the occasional need to lift heavy objects). Six months later the ALP had dropped to 83 U/L. 12 months later the T score at the spine was now -0.6, an increase of 24%!

What is unusual about this case is that the Vitamin D was above 75 nmol/L which eliminates the possibility of secondary hyperparathyroidism. If this was present it could certainly lead to an increase in the bone isoenzyme of ALP.

Any further comments or suggestions to explain just what it is about coeliac disease that increases bone ALP are welcome. Certainly osteopenia is prevalent in patients with coeliac disease and this will be discussed in our next newsletter, stay tuned.

ZOLEDRONATE SUPRESSESS BONE RESPORPTION FOR UP TO 5 YEARS

"Five years of anti-resorptive activity after a single dose of zoledronate – Results from a randomized double-blind placebo-controlled trial" was published in Bone in March 2012. The aim of the paper was to provide further information concerning the optimal dosing interval for zoledronate.

In this study 50 postmenopausal women were studied up to 5 years following one dose of intravenous zoledronate 5 mg or matching placebo. Baseline serum CrossLaps was around 500 ng/L in both groups, suggestive of accelerated bone turnover (reflecting postmenopausal status) and indicating that these were good candidates for treatment.

In the active treatment group serum CrossLaps dropped to ~ 150 ng/L at 12 months and slowly rose to ~ 280 ng/L at 60 months. In the placebo group serum CrossLaps increased from the initial 500 ng/L to ~ 550 ng/L. The serum CrossLaps was 48% lower in the zoledronate group vs placebo at the end of 5 years. BMD at the spine and hip were respectively 4.1% and 5.3% higher in the zoledronate group.

This study was far too small to include fracture endpoints but no doubt suitably powered studies will follow. It again emphasizes the complementary role of BMD and CrossLaps measurements.