

POSTER PRESENTATION

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Bone metabolism and bone mineral density in adolescent idiopathic scoliosis

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Objective

To characterize bone metabolism in AIS patients using bone metabolism markers.

Summary of background data

Although osteopenia is often associated with AIS, bone metabolism in this condition has not been assessed.

Methods

Bone mineral density (BMD) of the lumbar spine and bilateral proximal femurs (dual energy x-ray absorptiometry) and bone metabolism markers {bone formation marker: serum bone alkaline phosphatase (BAP); bone resorption marker: serum tartrate-resistant acid phosphatase serum band 5 (TRAP5b)} were measured in 55 consecutive AIS subjects aged 10 to 18 years-old (mean: 15.6+/-1.7). BMD, body mass index (BMI), and age of menarche were compared between subjects with normal and high values of TRAP5b.

Results

Nineteen subjects (34%) had osteopenia and 17 subjects (31%) had osteoporosis. In 51 AIS subjects (93%), values for BAP were within normal range, while 33 subjects (60%) had high values for TRAP5b. Subjects with high values for TRAP5b had BMDs of the lumbar spine significantly lower than BMDs of patients with normal values of TRAP5b.

Conclusions

The primary cause of low BMD in AIS was increased bone resorption.

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