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Journal scan

Olof Gustaf Sköldenberg et al. The effect of weekly Risedronate on periprosthetic bone resorption following total hip arthroplasty. A randomized, double-blind, placebo-controlled trial. *J Bone Joint Surg (Am).* 2011;93:1857–1864.

Bone resorption around a well-fixed uncemented femoral stem following total hip arthroplasty secondary to stress shielding is quite well established. This bone resorption potentially increases the difficulty of revision surgery and increases the prevalence of periprosthetic fractures. Bisphosphonates, including risedronate, are being increasingly used for their antiresorptive activity in the treatment of osteoporosis, multiple myeloma and Paget's disease.

Multiple factors contribute to osteolysis around proximal femur which includes stress shielding as well as implant wear debris associated osteolysis. Though the wear debris have been significantly reduced by modern bearing surfaces, wear associated osteolysis has not been reduced to zero.¹ If bisphosphonates, like risedronate, can further reduce the osteolysis by their antiresorptive action, they would significantly improve the life expectancy of a femoral implant especially in young active patients.

In this study, the authors compared the reduction in bone loss in patients taking bisphosphonates (risedronate-35 mg weekly for at least 6 months) following hip arthroplasty with patients who had not undergone hip arthroplasty and received the same drug. They noted that risedronate effectively reduced bone resorption around an uncemented femoral stem upto one year after surgery but had no clearly discernible effect on implant migration or clinical outcome. The risk of hip fracture was significantly reduced in both the groups.

However, it is not clear whether we can equate this risk reduction in both the patient groups. It is not rational to presume that a stronger medial femoral calcar will decrease the periprosthetic fracture rates. Also we need to be alert about possible adverse effects of long-term bisphosphonate therapy. An increasing risk of femoral fracture in the region

just distal to a well-fixed stem is absolutely undesirable.² Also, there was a withdrawal rate of 11% in the bisphosphonate group due to urticaria and nausea.

Despite a few shortcomings, this study has opened the doors for further studies on exploring possible role of bisphosphonates to reduce bone loss around a cementless implant. The authors and their institution must be complimented for conducting a well-designed prospective, randomized, double-blinded study. The patients will be immensely benefited if an agent can be identified to reduce bone loss without significant adverse effects. Larger multi centre studies with a longer duration of follow up are required to assess benefits accrued, specifically related to reduction of risks of revision arthroplasty and periprosthetic fractures.

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