

## BONE

## Diuretic use affects risk of hip implant failure

Users of loop diuretics are at an increased risk of hip implant failure, according to a study published by a Danish group.

Primary total hip arthroplasty is an effective treatment for arthritis of the hip joint, but in a minority of cases revision surgery is required because of deep infection, aseptic loosening, dislocation or other causes. Research has revealed a number of patient-related factors associated with hip implant survival; however, the potential influence of drug use on hip implant survival has not been adequately studied. In a nested, case-control study, Thillemann and co-investigators aimed to unravel the relationship between use of diuretics and risk of revision after primary hip arthroplasty.

Diuretics are used for the treatment of hypertension and congestive heart failure, but also seem to influence bone metabolism. Thiazid diuretics increase BMD and decrease fracture risk whereas loop diuretics increase bone turnover and, thus, decrease BMD and increase fracture risk. “We, therefore, hypothesized that thiazid diuretics and loop diuretics were associated with improved and impaired implant survival, respectively,” explains Theis Thillemann of Aarhus University Hospital, Denmark.

The researchers used data from national medical registries to identify 2,491 patients who had undergone primary total hip arthroplasty surgery and a revision of the surgery in the period 1996–2005; these cases were matched by age, sex and year of primary surgery to 4,943 control patients with nonrevised primary total hip arthroplasty. Relative risk of revision owing to specific or all causes was calculated for patients who had used thiazid diuretic or loop diuretic after the surgery. The researchers adjusted for a wide range of potentially confounding factors in their analysis.

Unexpectedly, use of thiazid diuretics did not affect risk of revisions. In contrast, use of loop diuretics was associated with an increased risk of revision following the surgery; deep infection and periprosthetic fracture were specific causes of revision that were particularly increased for users of loop diuretics compared with nonusers. Nevertheless, Thillemann and co-investigators stress that the increased relative risk of revision with loop diuretics is relatively small in relation to the overall cumulative failure rate reported for the cohort they studied.

“Loop diuretics are effective and cheap in the treatment of arterial hypertension and congestive heart failure,” points out



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Thillemann. “In that context we do not recommend loop diuretics to be avoided in patients who have undergone primary total hip arthroplasty, but the potentially increased risk of implant failure for loop diuretic users should be taken into account and discussed with these patients.”

Carol Wilson

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