

## **Good long term stability with low monomer bone cement in total hip arthroplasty. A randomized RSA study**

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### **Introduction**

Low temperature curing cement with less toxic monomers might obtain a better long term fixation to bone. The cement showed lower curing temperature in laboratory and less shrinkage during polymerisation (Nivbrant et al. 2001). We reported earlier on the 5 year results which showed excellent stability in both groups. A tendency to less wear for the low monomer cement could be seen. We have followed up the patients and now can report clinical and fixation results after 10 years.

### **Method**

44 patients (47 hips) with osteoarthritis of the hip were randomised to fixation with either a low monomer, (Cemex® Rx & Cemex® System) with Ba opacifier or normal cement, (Palacos® R) containing Zirconium contrast. We used Lubinus® SP2 femoral stems of Titanium alloy, third generation cementing and an all-poly cup. Palacos cement was vacuum mixed while Cemex was not, all according to manufacturers recommendations. Thirty-four patients were evaluated with RSA, conventional radiography and hip score at 10 years while 13 were diseased or refused follow-up due to poor health.

### **Results**

The stems fixed with Cemex subsided a mean (CI) of 0.46 mm (0.1-0.8) and retroverted 0.82 degrees (0.2-1.4). Stems fixed with Palacos subsided 0.28 mm (0.1-0.5) but rotated more inside the cement, 1.48 degrees (0.6-2.3). The cups were uniformly stable and wear low (0.04 mm / year) regardless the cement used. Radiolucent lines were few and non-progressive and there was no difference in HHS score.

### **Discussion/Conclusion**

These results confirm our good mid-term results with Cemex® cement in spite of titanium stems. We found no benefit of less toxicity and heat it seems, but at least it works as well as Palacos over 10 years. Vacuum, mixing of this low monomer cement might improve its performance further. Barium or Zirconium as contrast did not influence wear as reported before.