AB118. 198. Cobalt: chromium ratios in corrosion of metal on metal total hip replacements

Danilo Vukanic, Finian Doyle, Enda Kelly, Paul McKenna

Department of Trauma and Orthopaedic Surgery, University Hospital Waterford, Waterford, Ireland

Background: Metal on metal total hip replacements (THR) and hip resurfacings (HR) are associated with cobalt and chromium release, which causes local tissue reactions. As a result, there is associated implant failure secondary to tissue reaction and osteolysis, resulting in implant loosening. These metals are also detectable in the bloodstream of patients. The ratio of levels of these ions is postulated to be different in the two types of metal on metal replacement.

Methods: We analysed a database of all metal on metal total hip replacements and resurfacings, who required a revision procedure in University Hospital Waterford. The cobalt: chromium ratio to for all the patients in the cohort was compared ascertain if it was predictive of the type of corrosion present at the time of revision surgery.

Results: In total 150 patients were included in the study group. The cobalt: chromium ratios for each patient were analysed and compared to the type of hip procedure performed. The ratios for the two groups were 1.6 for the metal of metal and 2.1 for the large head resurfacings group.

Conclusions: The cobalt: chromium ratio obtained on blood analysis can be used as a surrogate marker of the type of corrosion present in hip revision surgery for metal on metal complications. It is useful as trunnionosis damage usually requires a revision of a potentially well-fixed stem which can be associated with increased morbidity, whereas the large head metal on metal damage can be revised with acetabular component replacement.

Keywords: Cobalt; chromium; ratio; hip; replacement

doi: 10.21037/map.2018.AB118

Cite this abstract as: Vukanic D, Doyle F, Kelly E, McKenna P. Cobalt: chromium ratios in corrosion of metal on metal total hip replacements. Mesentery Peritoneum 2018;2:AB118. doi: 10.21037/map.2018.AB118