



PEER-REVIEW REPORT

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Title: Osteolysis in THA in Relation to Different Degrees of Release of Metal Ions. Comparison between Monolithic Prostheses and Different Types of Modularity.

Reviewer's code: 03999237

Position: Peer Reviewer

Academic degree: MS

Professional title: Professor

Reviewer's Country/Territory: India

Author's Country/Territory: Italy

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input checked="" type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



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SPECIFIC COMMENTS TO AUTHORS

English and words need editing Abstract Spelling mistakes Background
Methods in order to detect areas of osteolysis around the prosthese, both in femour and
in acetabular bone ... to detect area of osteolysis around the prostheses in the
femur as well as the acetabulum. Materials and methods Exclusion criteria
Patients who use or have used Cr and Co for work reasons or exposed to such metals in
everyday life. Please explain Exposure to cobalt and chromium at workplace /
occupational hazard The hip surgical approach was the same for all patients:
Kocher-Langebeck poster-side approachPosterior approach Although we did
not conducted any invasive procedure onto people who were enrolled, every patient
included in the study signed an informed consensus. For each patient, we conducted
anterior-posterior weight-bearing and latero-lateral radiographs of the pelvis. They have
been evaluated using the IMPAX computer program available in the telematics systems.

Needs to be written in proper sentence construction. In the two projections, the
authors searched for possible osteolytic processes and periprosthetic aseptic detachment,
reporting for each patient the site and the degree of osteolysis. Both the xray
projections were evaluated. Assessment of osteolysis with presence of radiolucent
areas or lines in all the zones described by Gruen for the femur and DeLee for the
acetabulum. ALL the sub sections need extensive editing Results As presented
in tables I, II and III, we quantified the levels of metal-ion both in blood and in urine
samples. We calculated the mean values for each group. The mean value of serum Cr
was 0,54 µg/l for group A, 0,67 µg/l for group B and 0,91µg/l for group C; the mean
value of serum Co was 3,59 µg/l for group A, 3,05 µg/l for group B and 5,29 µg/l for
group C; the mean value of urine Cr was 1,41 µg/g.creat for group A, 2,34 µg/g.creat for
group B and 2,95 µg/g.creat for group C; the mean value of urine Co was 10,06



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$\mu\text{g/g.creat}$ for group A, 14,42 $\mu\text{g/g.creat}$ for group B and 21,73 $\mu\text{g/g.creat}$ for group C.

Kindly mention the normal range in serum and urine $\mu\text{g/L}$ needs to be uniform $\mu\text{g/L}$ and $\mu\text{g/G}$ used - please correct and clarify Suddenly we could notice the evidence that in modular THAs groups (B and C) there are higher serum and urinary levels of Cr and Co levels and an higher prevalence of osteolysis.

Sentence to be rewritten Linear regressions conducted in order to quantify a direct relation between ion-release and osteolysis shown us a positive result (>0) for every test, though different significativity for every test. Please elaborate and clarify statistical methods What P value was considered significant Provide mean with SD standard deviation Please give the correlation as well between serum as well as urine levels Also between loosening and blood and urine levels For the graphs and tables Kindly remove all initials , etc for patient identity. Provide mean with SD levels And also distribution of values Discussion Neck-to-stem degeneration is more significant than the head-to-neck junction due to the higher mechanical stresses and an increased lever arm[19]. Stem - stem Neck to stem degeneration - please explain - more appropriate to use - wear/ corrosion or metallosis Joint prostheses in CoCr are not subject to standard biological monitoring and the acceptable levels of CoCr in blood and urine have yet to be established. To date, it is not common practice to measure CoCr's serum and urinary levels in patients undergoing prosthetic surgery. The elevation of the blood Co , Cr levels when compared to normal values are considered significant and this has been studied in MOM with ALVAL lesions . Moreover, probably due to the small number of patients and the impossibility of having a sufficient number of patients perform an MRI examination, it was not possible to hypothesize a relationship between the phenomenon of inflammatory pseudotumors and the degree of metal release or severity of periprosthetic osteolysis Needs to be written better MRI was not done for any of the patients in this series hence the



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correlation between elevated serum , urine levels and xray findings were not possible which would have been ideal. Kindly include the following references And discussion need s to be modified

1. J Bone Joint Surg Br. 2007 Feb;89(2):169-73. doi: 10.1302/0301-620X.89B2.18519. Blood and urine metal ion levels in young and active patients after Birmingham hip resurfacing arthroplasty: four-year results of a prospective longitudinal study J Daniel 1, H Ziaee, C Pradhan, P B Pynsent, D J W McMinn
2. Diagnostics (Basel). 2020 Nov 12;10(11):941. doi: 10.3390/diagnostics10110941. Metal Ion Release, Clinical and Radiological Outcomes in Large Diameter Metal-on-Metal Total Hip Arthroplasty at Long-Term Follow-Up Assunta Pozzuoli 1, Antonio Berizzi 2, Alberto Crimì 2, Elisa Belluzzi 1, Anna Chiara Frigo 3, Giorgio De Conti 4, Annamaria Nicolli 5, Andrea Trevisan 5, Carlo Biz 2, Pietro Ruggieri 2