

PEER-REVIEW REPORT

Name of journal: World Journal of Orthopedics

Manuscript NO: 56927

Title: Highly cross-linked versus conventional polyethylene inserts in total hip arthroplasty, a five-year Röntgen stereophotogrammetric analysis randomised controlled trial

Reviewer's code: 03071141

Position: Peer Reviewer

Academic degree: BCPS

Professional title: Surgeon

Reviewer's Country/Territory: Turkey

Author's Country/Territory: Netherlands

Manuscript submission date: 2020-05-19

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-05-19 20:06

Reviewer performed review: 2020-05-20 07:15

Review time: 11 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input checked="" type="checkbox"/> Grade A: Priority publishing <input 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 type="checkbox"/> Accept (High priority) <input checked="" 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	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous

statements

Conflicts-of-Interest: [☐] Yes [☒] No

SPECIFIC COMMENTS TO AUTHORS

The paper titled ‘Does Highly Cross-Linked Polyethylene Acetabular Insert in Total Hip Arthroplasty have a lower Wear Rate than Conventional Polyethylene in Vivo; five-year follow-up outcomes of a RSA RCT.’ is a double blinded prospective study aiming to compare wear of REXPOL, a HXPLE, with conventional PE within the first five years after implantation using Röntgen Stereophotogrammetric Analysis (RSA). In Line 128 “Previous RSA studies showed a high degree of sensitivity and accuracy of measurements of migration; relatively small patient groups would show statistically significant outcome” This statement needs citation. Sample size calculation should be more clearly expressed. In line 181, functional results are reported. It is irrelevant to the title and aim of the study. Functional results should be removed or title/aim should be revised by including this results. In Line 193, “Statistical analyses were performed with Statistical Package for Social Sciences (SPSS) version 25.0 (SPSS Inc. Chicago, IL).” 25.0 version the SPSS is from different company. SPSS version or company name should be corrected. Discussion section is too long and should be shortened. Current study aimed to compare wear of two insert. Between Line 287-300, revision rates and osteolysis are discussed. Are they relevant to your research question? Number of references is 47, as current paper is research article (not the review article). I advise reducing the number of references. I thank authors for this valuable retrospective study. Current paper is acceptable for publication after revision.

PEER-REVIEW REPORT

Name of journal: World Journal of Orthopedics

Manuscript NO: 56927

Title: Highly cross-linked versus conventional polyethylene inserts in total hip arthroplasty, a five-year Röntgen stereophotogrammetric analysis randomised controlled trial

Reviewer's code: 05380909

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Korea

Author's Country/Territory: Netherlands

Manuscript submission date: 2020-05-19

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-05-19 23:23

Reviewer performed review: 2020-05-24 01:13

Review time: 4 Days and 1 Hour

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 type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous

statements

Conflicts-of-Interest: [] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

Reviewer's Code: 05380909 Manuscript NO : 56927 Thank you for submitting this important topic I have few remarks and comments. 1. Abstract : no suggestion 2.

Materials and methods: One or two figures that show the RSA measurement of installed tantalum markers would make the readership to easily understand your study and would improve the quality of your work. Who measured the wear rates and functional scores? 3. In the 'Result', you don't have to enumerate the whole data. They are already all in the table. But you should describe the trend of data. You need to describe about the cup inclination, LLD, abductor offset, and plastic thickness. Is there any difference in wear rate between bedding-in time and steady-state? 4. In the 'Discussion', you need to shorten the content of line 296-326. The outcome of your study was evaluated at the time point of five years. Some insight you have found while performing the study should be provided to the readership. The meanings and caveats of your study, as compared with previous studies, should be described with logic. This study is based on a well-designed double-blinded prospective randomized controlled trial and have compared the wear rates of HXLPE to conventional PE by means of RSA. However, pre-existing articles, including long-term follow-up studies, have already reported that highly cross-linked PE show less wear than conventional PE. Many studies have reported the wear rate on the HXLPE and convention PE by means of RSA. The difference in the study design between this study and previous RSA studies comparing HXLPE to conventional PE may not be significant, and it may be hard for this article to provide new information. Moreover, wear rates of conventional PE have been reported to be low during mid-term follow-up, and several in vivo studies have reported that the increase in long-term wear rates are causing more significant problems. Since



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the follow-up period of this study is only 5 years, clinical significance may be limited.