Comment on Li et al.: Single-bundle versus double-bundle anterior cruciate ligament reconstruction: an up-to-date meta-analysis

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Dear Editor,

In *International Orthopaedics*, Xue Li and his colleagues published a meta-analysis conducted to compare the efficacy of arthroscopic single-bundle and double-bundle anterior cruciate ligament reconstruction, and they did very well [1]. However, the meta-analysis has brought a few questions to our minds that we would like to convey to the authors:

1. Publication language was limited to English in the meta-analysis. Therefore, the authors should mention the potential importance of language bias in the limitations of their meta-analysis.
2. In the article, the authors used the odds ratio (OR) for dichotomous outcomes to report the risk value rather than relative risk (RR). As there are 17 randomised controlled trials (RCTs) included, RR can report the real risk value better than OR. Therefore, we suggest that RR should be used to report the risk value in this article.
3. It is not sufficient that publication bias was only assessed by visual examination of a funnel plot. Funnel plot symmetry should be further assessed by statistical tests (e.g. Egger's linear regression test or Begg's rank correlation test). Moreover, in the meta-analysis, publication bias was only assessed for KT1000 arthrometer measurements. Actually, publication bias should be assessed for other comparisons (such as Lysholm score, objective International Knee Documentation Committee score, negative pivot-shift test). Therefore, publication bias may be present, distorting the meta-analysis.

4. It is not appropriate that summary OR and standard mean difference (SMD) estimates with corresponding 95 % confidence intervals were derived by using the method of Mantel-Haenszel (M-H) or inverse variance (IV) with the assumptions of a random effects model. However, studies should be combined by using the DerSimonian and Laird random effects model, which considers both within- and between-study variations [2].
5. The difference in the follow-up periods between studies was large, which may cause heterogeneity. Subgroup analysis was performed by stratifying the available data according to follow-up periods. To make the article more credible, the authors should analyse the effect of single-bundle versus double-bundle anterior cruciate ligament reconstruction according to different ages and sexes on account of the limitation of the studies included. Moreover, further high-quality RCTs based on larger sample sizes are still needed.
6. Evidence indicated that only the larger study should be included for analysis when some publications contained the same or overlapping data. There are two studies performed by Järvelä et al. [3, 4] containing overlapping data. In the two studies, all patients were recruited from Hatanpää Hospital, Tampere, Finland. Concerning patients with anterior cruciate ligament reconstruction, the study by Järvelä et al. [3] carried out in 2005 included 52 single-bundle and 25 double-bundle reconstructions, and the second study by Järvelä et al. [4] included 25 single-bundle and 35 double-bundle reconstructions. Therefore, the larger group of single-bundle reconstructions and the larger group of double-bundle reconstructions by Järvelä et al. [3, 4] should be included in this meta-analysis.

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Moreover, further high-quality RCTs based on larger sample sizes are still needed to compare arthroscopic single-bundle and double-bundle anterior cruciate ligament reconstructions. We believe that our remarks will contribute to more accurate elaboration of the results presented by Li et al.

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