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**Duplicate publication bias weakens the validity of meta-analysis of immunosuppression after transplantation**

Fairfield CJ *et al*. Duplicate publication bias in meta-analysis

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**Abstract**

Duplicate publication can introduce significant bias into a meta-analysis if studies are inadvertently included more than once. Many studies are published in more than one journal to maximize readership and impact of the study findings. Inclusion of multiple publications of the same study within a meta-analysis affords inappropriate weight to the duplicated data if reports of the same study are not linked together. As studies which have positive findings are more likely to be published in multiple journals this leads to a potential overestimate of the benefits of an intervention. Recent advances in immunosuppression strategies following liver transplantation have led to many studies investigating immunosuppressive regimes including immunosuppression monotherapy. In this letter we focus on a recently published meta-analysis by Lan *et al* investigating studies assessing immunosuppression monotherapy for liver transplantation. The authors claim to have identified fourteen separate randomised studies investigating immunosuppression monotherapy. Seven of the references appear to relate to only three studies which have been subject to duplicate publication. Several similarities can be identified in each of the duplicate publications including similar authorship, identical immunosuppression regimes, identical dates of enrolment and citation of the original publication in the subsequent manuscripts. We discuss the evidence of the duplicate publication inclusion in the meta-analysis.

**Key words:** Liver transplantation; Immunosuppression; Meta-analysis; Duplicate publication; Bias

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**Core tip:** The purpose of this letter to the editor is to comment on the potential inclusion of duplicate publications within the meta-analysis titled: “Efficacy of immunosuppression monotherapy after liver transplantation: A meta-analysis”.

Fairfield CJ, Harrison EM, Wigmore SJ. Duplicate publication bias weakens the validity of meta-analysis of immunosuppression after transplantation. *World J Gastroenterol* 2017; In press

**TO THE EDITOR**

We read with interest the article titled “Efficacy of immunosuppression monotherapy after liver transplantation: A meta-analysis” by Lan *et al*[1]. The authors have performed a meta-analysis assessing the use of immunosuppression monotherapy after liver transplantation. The authors claim to have included fourteen randomised studies comparing monotherapy *vs* combination immunosuppression for liver transplanted patients and conclude that calcineurin inhibitor monotherapy is both effective and leads to fewer adverse events than combination therapy. The authors state that the review is the first meta-analysis to include multiple studies assessing the effect of immunosuppression with or without steroids on graft rejection after liver transplantation. Finally, the authors state that the strengths of their review include duplicate study elimination. For the following reasons, we do not agree with their results or their conclusions.

The authors claim to have included fourteen separate randomised studies. On closer inspection, the authors have included seven references relating to only three randomised studies and have not made adequate efforts to eliminate duplicate studies[2-8].

The first of these studies was performed in the United Kingdom and both publications share the same start date, protocol, several co-authors and the same recruitment centres[2,3]. The earlier publication appears to record preliminary results[2]. Lan *et al*[3] appear to have included these preliminary results as a separate study. Furthermore, the main publication relating to this study clearly states that the findings are “similar to those in our preliminary report”. The citation in support of this statement is identical to that included as a separate study in the meta-analysis by Lan *et al*[3].

The second of these studies was performed in Germany and both publications share the same enrolment dates, protocol, several co-authors, recruitment centre and numbers of patients allocated to each intervention arm[4,5]. Furthermore, the publication recording long-term follow-up for patients in this study explicitly states that the authors have previously published their study and that in the publication in 2010 they “present the results of a re-evaluation of our study patients”[5].

The third of these studies was performed in Italy and all three publications share the same enrolment dates, several co-authors, recruitment centre and protocol[6-8]. Furthermore, both duplicate studies with later publication dates explicitly state that the earlier publications are interim reports relating to the same study[6,7].

The authors also claim to have published the first meta-analysis assessing steroid-free immunosuppression in liver transplanted patients. Three meta-analyses[9-11] were published prior to the date of submission by Lan *et al*[1]. Two further meta-analyses have been published since this date[12,13]. In each case where any of the three studies discussed have been included in another meta-analyses the authors have concluded that the studies have been subject to duplicate publication.

The problem with inclusion of duplicated data in meta-analyses is that it creates bias with inappropriate weight being afforded to the duplicate data. The failure in Lan 2014 to adequately avoid duplicate publication bias may mean that the results of this meta-analysis are invalid.

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