



LETTER  
TO THE  
EDITOR

Letter to the Editor

Denismar Borges de Miranda<sup>1</sup>, Paulo Moacir de Oliveira Campoli<sup>1</sup>, Marília Dalva Turchi<sup>1</sup>

<sup>1</sup> Universidade Federal de Goiás, Instituto de Patologia Tropical e Saúde Pública, Goiânia, GO, Brasil. denismarmiranda@hotmail.com

Dear Editor,

It was with great interest that we read the meta-analysis published by Taminato et al. (May/June 2015) that assessed the risk of infection in patients receiving living and deceased donor kidney transplantations, published by this reputable journal<sup>(1)</sup>.

The authors observed increased risk of infection in patients who received deceased donor kidney transplantation in comparison with living donor kidney transplantation, with an odds ratio of 2.65 [CI 95% 2.05 – 3.41]. This result represents an increased risk of 165%, much higher than the percentage reported in the CONCLUSION, which states that the risk for developing infection was 20% higher.

Another even more relevant issue refers to the assessment of heterogeneity. In the last topic of the METHOD section, the authors established that the studies were considered heterogeneous if  $I^2$  was greater or equal to 50%. In Figure 3, the value of the  $I^2$  test for heterogeneity was 93%, which together with the result of the chi-squared test for heterogeneity ( $p < 0.00001$ ) clearly indicates high study heterogeneity. Figure 3 also shows that the summary effect was calculated using the fixed effects model, which goes against the principle that high heterogeneity requires the use of random effects models<sup>(2)</sup>. On recalculating the meta-analysis using the random effects model with the Comprehensive Meta-Analysis software program, we found a totally different result than that presented by the authors: OR 1.89 [CI 95% 0.44 – 8.22] and  $p = 0.39$ . Therefore, even though there was a higher risk for infection in the kidney recipients with deceased donors, it was not statistically significant, and this result completely changes the conclusion of the study.

We believe that the main result of this study should be re-calculated and the conclusions modified.

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Dear reader,

It is with much satisfaction that we respond to the points raised in your letter and we would like to take the opportunity to explain some points of our study.

To conduct a systematic review, we must follow the appropriate methodology with the needed scientific rigor, avoiding bias and imprecision. The best form to control bias in a systematic review is to include randomized clinical trials as per the guidelines of the Cochrane Collaboration<sup>(1)</sup>. This was not possible in this review, in which observational studies were the ideal design to analyze the expected outcomes. To minimize possible bias, we employed the STROBE<sup>(2)</sup> instrument to assess the methodological quality of such observational studies.

The reason we used multiple sensitivity analyses was to identify possible heterogeneity in the meta-analyses. Heterogeneity in systematic reviews is the variability or difference between studies with regards to the effect estimate<sup>(3)</sup>.

The researchers involved in the study opted to use the fixed effects model to estimate the treatment effect. This was due to the existence of a true value for the variable of interest; all clinical trials estimate this single value. The differences between the estimates (variation) are caused by variations between studies (sample variance).

Statistical tests of heterogeneity are used to determine if the variability observed in the results of one study (effect size) is greater than that expected due to chance alone. However, these tests have their limitations and must be used carefully.

Given that these clinical, methodological and statistical heterogeneities always exist, all clinical systematic reviews must address the subject. However, there is still no consensus between Cochrane review groups about how these analyses should be planned or how such heterogeneities should be addressed once identified.

The recommendation is that the Cochrane review group be consulted to establish which procedures should be adopted, i.e., how the study should be formulated. Heterogeneities should be explained in the discussion section of systematic reviews, whether identified or not.

Special mention goes to the precepts of the Cochrane Collaboration, which are to synthesize information on the theme, reduce confidence intervals, increase precision of data estimates, allow for the assessment of differences between studies on the same topic, and avoid duplicate efforts<sup>(1)</sup>.

We inform that the outcome and infection in living versus deceased kidney donor transplantation was classically responded.

We appreciate your observations and hope to have answered your questions about the study.

Mônica Taminato et al.  
mo\_tami@yahoo.com.br

### REFERENCES

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