Author's response to reviews

Title: Comparison of the risk factors effects between two populations: two alternative approaches illustrated by the analysis of first and second kidney transplant recipients.

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Author's response to reviews: see over
Dear Editor-in-Chief,

Please find enclosed a manuscript titled “Comparison of the risk factors effects between two populations: two alternative approaches illustrated by the analysis of first and second kidney transplant recipients”, with Katy Trébern-Launay as the first author.

In this paper, we conducted an epidemiological study on a large cohort of 2772 recipients including 2206 first transplant recipients and 566 second transplant recipients, taking advantages of the validated French kidney transplantation database DIVAT.

This study provides further information regarding the differences in risk factors associated with time to graft failure between first and second kidney transplant recipients. To this end, we propose two alternative strategies that overcome limitations of traditional approaches: a multiplicative-regression model for relative survival and a stratified Cox model specifying the graft rank as strata.

Our results provide the information that: (i) male donor gender is a specific risk factor of graft failure for second grafts, (ii) the adverse effect of recipient age is enhanced for second grafts and (iii) conversely the adverse effect of donor age is attenuated for second grafts compared to first grafts. Thus, the proposed relative and stratified models revealed new findings that are useful for clinicians.

Although we illustrated the advantages of both alternative approaches in renal transplantation, these methodologies may be useful in number of other clinical and epidemiological applications. Our data may encourage further studies where the principal objective is the comparison of risk factors between two populations.

The new observation we bring is, we think, of potential clinical and epidemiological interest for the readers of BMC Medical Research Methodology.

With my best regards.

Yohann Foucher