Reviewer's report

Title: Polycystic Kidney Disease in Patients on the Renal Transplant Waiting List: Trends in Hematocrit and Survival

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Reviewer: Prof Francesco Locatelli

Level of interest: A paper of limited interest

Advice on publication: Reject

The paper "Polycystic Kidney Disease in patients on the Renal Transplant Waiting List: Trends in Hematocrit and Survival" by Abbot and colleagues deals with an interesting topic. It is a matter of fact that the relationship between hematocrit level and survival in the dialysis population as a whole is of particular interest and of course it is also important in patients with Polycystic kidney disease (PKD). The methodology used for this study is of high quality, unfortunately the information given by the study is rather poor. The limitation of this study, similar to those of other retrospective studies, have already been underlined by the authors, particularly as far as the diagnosis of polycystic kidney disease is concerned. In my opinion the most important drawback is the so called "salami effect" that is to divide the information in different papers (see for example reference 3 that reports more or less the same data from the same Registry from the same authors), thus losing the possibility to give the readers a comprehensive analysis of the problem. Because of this way to present the data, it is impossible for the reader to receive useful epidemiological and clinical messages: the paper is merely a descriptive analysis of the associations between different parameters without possible relevant interpretation of the data.

This study is very confusing in the objectives and in related statistical techniques that have been applied. For example, which is the rationale of the use of the
regression analysis and the logistic analysis to explore the same relationship between anemia level and PKD? Why the Authors did use both hemoglobin and hematocrit, that are clearly correlated to each other and thus redundant? It is quite obvious for expert readers that only one of these covariates (because of their correlation) are related to survival in the Cox multivariate analysis, but this could be not the case for the a "normal reader", that represents the most usual situation. The results of cox regression analysis are very confusing: for example, did the authors include pre-dialysis EPO use in the analysis? The normal hematocrit trial (Besarab A et al N Engl J Med 1998; 339: 584 - 90) have suggested that not only the anemia level is important, but also the way the value is reached!

The authors should avoid inaccuracy and non-informative messages, that suggest a poor attention in the making the paper: for example, why the Authors leave the case labels (likely case numbers of the used data base) in figures 1 and 2; reference 13 is the same of the reference 4 and even presented in different way as you can see from the pages numeration (520-529 and 520-9); moreover it is not reported that reference 2 is simply a letter and not a full paper.

Considering that the survival advantage of PKD in ESRD persisted even when the authors in this historical Cohort study, adjusted for differences in hematocrit and in comparison with patients on the renal transplantant waiting list, the authors should have discussed the limitation of the statistical adjustment for comorbidities particularly when analysis the Registry Data; I don't think that the limitation of the analysis of the patients enrolled on the renal transplant waiting list is enough to correct for bias of patient selection. Moreover the fact that no information on patient medications was available for the entire cohort of patients, except for the use of pre-dialysis erythropoietin, it didn't allow the authors to take into consideration the role of some drugs (like ace-inhibitors and angiotensin II receptor antagonist) on the hematocrit and haemoglobin levels and their possible different use in the different underlying diseases. A problem of great importance is the fact that there is no information about the distribution of Epo treatment in the different underlying renal diseases.

Could be of interest to know the percentage of the patients with PKD in waiting list transplanted in comparison with the percentage of the patients with other underlying disease, just to have an idea of possible selection bias.

**Competing interests:**

None declared.