Author’s response to reviews

Title: Factors associated with residual urine volume preservation in patients undergoing hemodialysis for end-stage kidney disease, in Kinshasa Short title: residual urine volume in hemodialysis

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Author’s response to reviews:

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To the Editor in Chief

BMC Nephrology,

Concern: Re-Manuscript ≠ BNEP≠ BNEP-D-16-00248 R1
Thank you so much for your letter of 09 th November in which you requested some modifications of our manuscript entitled « Factors associated with residual urine volume preservation in patients undergoing hemodialysis for end-stage kidney disease, in Kinshasa». Short title: Residual urine volume in HD," (BNEP-D-16-00248 R1). We are thus pleased to resubmit the new version according to reviewer’s advices.

We agree with reviewer comments about Table 1: the variables "eGFR-MDRD", "serum creatinin" and "serum urea" which were asymmetric were expressed as median (interquartile range). The non-parametric Mann-Whitney test was applied to compare medians between the 2 groups of residual urine volume (RUV). The relevant modifications are now made in the manuscript.

Table 2: RUV was expressed as median (interquartile range).

However, we think it would be better to keep the population means of RUV as illustrated in figure 2. Indeed, this is the non-linear evolution of the RUV means observed in this figure which was used in order to test the quadratic effect of time in the model 2. Furthermore, since the model usually estimates means values, we have preferred to keep the RUV means in this figure. However, because our dependent variable (RUV) is somewhat asymmetric, we took care to state in the manuscript that we checked the validity of the model by a residue analysis.

As suggested by reviewer, the variable "proteinuria" was categorized as <1, 1-3 and> 3 g / 24h.

As mentioned early, we described the RUV by the median (interquartile range) in table 2.

However, table 2 describes the evolution of RUV (as a quantitative variable) over time and not as a dichotomous variable (presence vs absence). The interest of presenting the RUV as a continuous variable in this table 2 is that it is also modeled as a continuous variable thanks to a mixed-effect linear model, thus making it possible to describe the evolution of RUV over time. Describing the RUV as a dichotomous variable will bring to the surface the threshold problem of defining the presence or absence of previously resolved RUV at the first reversion of the manuscript, but also that it would involve changing the nature of the modeling using GEE models (generalized estimating equation).
As suggested by reviewer, we added the variable ARB in Tables 1 and 2; and the text has been adjusted. We also tested the ARB variable in the mixed-effect linear model as a fixed effect, but it was not significant.

We also added the variable "chronic tubulointerstitial nephropathy" (yes vs no) in tables 1, 2 and 3. Chronic tubulointerstitial nephropathy was significantly associated with the preservation of RUV.

Some patients stopped treatment due to financial constraints. The discontinuation of treatment because of financial constraints which raises the thorny issue of healthcare financing faced by almost all countries in Sub-Saharan Africa and calls for more responsibility from political and health authorities to reform the health system. This aspect has been discussed in our previous article (Mokoli et al. BMC Nephrology (2016) 17:182).

Patients with AKI or those whose renal function normalized during evolution were not included in this study.

We made the new statistical analysis using the STATA software due to license validity problem. We quoted the 2 software (SPSS and STATA).

According to reviewer comment, figure 2 has been modified: we have produced the individual RUV trajectories for a random sample of 50 patients for more readability of the graph.

Thank you for your readiness to review the corrected version of this manuscript, and expecting pending a positive feedback from you.
Warm regards,

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