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Reply to Letter to the Editor: "Improvement of Left Ventricular Function After Renal Transplantation Is Related with Multiple Parameters"

LETTER TO THE EDITOR REPLY

To the Editor,

We would like to thank the authors for their interest in our article.[1] Upon our hypothesis proposing the improvement in cardiac structure and functions might be related to the correction of volume overload, the restoration of normal hemoglobin levels, and/or the clearance of uremic toxins; the authors appropriately would like to know the pre- and post-transplantation levels of weight (as a surrogate for volume overload), hemoglobin, and blood urea nitrogen (BUN) (as a surrogate for uremic toxins) levels. We summarized these data in Table 1.

However, we would like to caution against supporting or refuting the above-mentioned hypothesis using these parameters, as such an attempt may be an oversimplification. For instance, weight is a very poor surrogate for volume status. The majority of the patients in our series gained weight after transplantation, due to several factors including increased appetite and glucocorticoid treatment. Mean systemic filling pressure measurement[2] or total body water estimation by bioimpedance analysis[3] might be useful, but we were not able to measure these. Similarly, BUN values poorly reflect global uremic toxin load and their clearance. Baseline BUN values were near normal since our patients were under dialysis treatment and the recorded measurements were obtained after dialysis. Furthermore, many uremic toxins and/or their biological effects have much longer half-lives compared to the half-life of BUN.[4]

As the authors stated, many other researchers speculated that the change in cardiac functions might be related to volume overload and uremic toxins.[5] Unfortunately, our article is also unable to provide solid evidence on the pathophysiologic background of the observed improvement in cardiac structure and functions with renal transplantation. However, with the increased awareness of this situation, especially by cardiologists, we believe further research will shed light on the issue.

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Table 1. Pre- and post-transplantation weight, hemoglobin, and blood urea nitrogen levels*

	Case 1		Case 2		Case 3		Case 4	
	Pre-transplantation	Post-transplantation	Pre-transplantation	Post-transplantation	Pre-transplantation	Post-transplantation	Pre-transplantation	Post-transplantation
Weight (kg)	72	80	50	56	87	77.5	53	64
BUN (mg/dL)	23	15	25	21	74	19	63	13
Hb (g/dL)	12.9	18	9.8	11.9	12.5	16.3	14.2	17.8

*Post-transplantation measurements were taken at the time of the control echocardiogram, as reported in the original article.
BUN, blood urea nitrogen; Hb, hemoglobin.

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