LETTER TO THE EDITOR

Body composition and nutritional therapy in renal transplant patients

Dear Editor,

Sabbatini et al. reported in a recent viewpoint the current limits for nutritional guidelines in renal transplant patients (RTP) [1]. In detail, both the end of the typical dietary restrictions for end stage renal disease patients and the new inevitable side effects of immunosuppressive regimens (steroids, Calcineurin Inhibitors and mTor inhibitors) on glucose and lipid metabolism may lead to the onset of new and multifaceted nutritional scenario.

A correct dietary intake could delay/prevent both long-term nephrological and cardiovascular complications in this cohort of patients [2–4]. However, data in literature of interventional studies to manage nutritional therapy in RTP are not always conclusive [5–7] and mostly based on crude body mass index evaluation (BMI), that shows several limitations to assess body composition (BC): lean mass (LM), fat mass (FM) and consequently to discover sarcopenic obesity [8]. In fact, a correct approach based on a reliable quantification of LM, FM and hydration in RTP could actually promote a more specific and oriented diet therapy. However, the "gold standard" method to assess thoroughly BC is still far to be elucidated [9]. According to this point, a recent British cross-sectional experience evaluated the roles of different anthropometric measures: x-ray absorptiometry (DEXA), bioelectrical impedance analysis (BIA) and the Hume formula to estimate BC and Body Fat % (BF %) [10].

The Hume formula requires gender, age, height and body mass (BM) and was originally developed to calculate LM in Male and Female patients [11]:

- Male LM $= (0.32810*$ BM [Kg]$) + (0.33929*$ Height [cm]$) - 29.5336$.
- Female LM $= (0.29569*$ BM [Kg]$) + (0.41813*$ Height [cm]$) - 43.2933$.

From this estimation of LM, it is possible to calculate FM $=$ BM $-$LM and BF% (FM/BM $* 100$) according to Carnelvale et al. [12].

Wilkinson et al. reported that Hume formula as a reliable and accurate marker to estimate body composition as well as DEXA (correlation coefficient 0.96; 95% CI 0.922 to -0.98), and it could be a valid, simple and free-of-cost alternative tool to DEXA, that instead requires use of radiation, unavoidable cost and well-trained personnel requirement [13].

According to this fact, Hume formula gives more detailed data about BC than BMI and these could be helpful in well-trained and oriented nutritional therapy intervention studies.

In conclusion, the correct appraise of BC is still an open question and current nutritional clinical tools are not precise enough, so more oriented algorithms like the Hume formula could be useful for a more guided and focused nutritional therapy in RTP.

Acknowledgements

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