



Letter to the Editor

Reply - Letter to the Editor



We would like to thank Sharawat IK and Dawman L for taking a keen interest in our published work and raising certain pertinent queries related to it [1].

The classification of Vitamin D status of the enrolled subjects in this study was decided at the time of protocol development as per the Endocrine Society's clinical practice guidelines which was widely used at the time of the starting of the trial [2]. The Global Consensus Recommendations on Prevention and Management of Nutritional Rickets and subsequent Indian recommendations which suggested a new classification to define Vitamin D deficiency were published after this study was completed [3]. It should also be noted that the primary outcome of this study was the mean 25(OH) D levels in either groups at baseline and at six months, and not a comparison of the proportion of subjects with deficiency/insufficiency/sufficiency between the two groups. Hence, the adoption of the newer classification of Vitamin D status would not have had a major bearing on the primary outcome of the trial.

The second point raised by the Authors is related to the statistical method used to compare the mean 25(OH) D values. Two factor Repeated measures ANOVA was applied to make intra- and inter-group comparisons. Firstly, the interaction between time and groups were checked. If found significant, then baseline and follow up values of 25 (OH) D were compared using paired *t*-test and *p*-value of <0.025 was considered significant due to Bonferroni correction. Inter-group comparison was tested by using two-way repeated measures ANOVA and if it was found to be significant, Tukey's post test was applied to find the significance.

The final query was related to the use of the correlation coefficient. We had used Pearson's *r* to study the correlation between 25(OH)D and the various biochemical variables. There was a significant inverse correlation between 25(OH)D levels and both serum Parathyroid hormone and serum Alkaline Phosphatase levels at baseline and at six months follow up in both the groups. It is well known that there are different approaches to calculate correlation in non-normally distributed data. Bishara et al. had studied these approaches used to test the significance of a correlation with non-normal data [4]. It was concluded that Pearson's *r* was relatively effective even in non-normally distributed data, except in studies with small sample sizes ($n < 10$) or in non-normal distribution with highly kurtotic shapes, such as the chi-squared or long-tailed distributions. In such cases, Spearman's *r* as suggested by the authors or a RIN transformation as studied by Bishara

et al. would be better alternatives. Some of the data of our study was non-normally distributed, but the distribution was neither chi-squared nor long-tailed. Bishara et al. has also pointed out many standard text books that consider Pearson's *r* to be very robust even in non -normally distributed data [4].

Conflict of interest

None.

Financial disclosure

None.

References

- [1] Viraraghavan VR, Seth A, Aneja S, Singh R, Dhanwal D. Effect of high dose vitamin d supplementation on vitamin d nutrition status of pre-pubertal children on anti-epileptic drugs - a randomized controlled trial. *Clin Nutr ESPEN* 2019;29:36–40.
- [2] Holick MF, Binkley NC, Bischoff-Ferrari HA, Gordon CM, Hanley DA, Heaney RP, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2011 Jul;96(7):1911–30.
- [3] Munns CF, Shaw N, Kiely M, Specker BL, Thacher TD, Ozono K, et al. Global Consensus recommendations on prevention and management of nutritional Rickets. *J Clin Endocrinol Metab* 2016 Feb;101(2):394–415.
- [4] Bishara AJI, Hittner JB. Testing the significance of a correlation with nonnormal data: comparison of Pearson, Spearman, transformation, and resampling approaches. *Psychol Methods* 2012 Sep;17(3):399–417.

V.R. Viraraghavan*

Department of Neonatology, Nori Multispeciality Hospital,
Vijayawada, India

Anju Seth

Department of Pediatrics, Lady Hardinge Medical College,
New Delhi, India

* Corresponding author. Sai Bhagavathy Apartments, 504, Gandhi Nagaram, Vijayawada, Andhra Pradesh, 520003, India.
E-mail address: 19.vira@gmail.com (V.R. Viraraghavan).

18 March 2019