

Correspondence

Seasonal variation & determinants in vitamin D deficiency in healthy breastfed term infants & their mothers in India

Sir,

There is alarmingly high incidence of vitamin D deficiency in healthy breast fed infants and their mothers at three months of age in India¹. Our intention is to emphasize the immediate prerequisite of simple, point-of-care assay formats for quantification of 25-hydroxyvitamin D (25 OH D) in the individual health care centres in urban and rural areas.

Quantifications of the 25 OH D continue to be a privilege of the academic and research centers¹⁻³ where trained personnel and sophisticated facilities to handle radioactive diagnostic kits are available. For example, Jain *et al*¹ measured the vitamin D levels at the All India Institute of Medical Sciences, New Delhi, as 25 OH D levels using the radioimmunoassay with commercially available kits (DiaSorin Inc, USA).

In view of the global prevalence of vitamin D deficiency among women in childbearing age and infants¹⁻³ it would be desirable to initiate simple and rapid point-of-care assays for quantification of vitamin D₃, and 25 OH D, levels in general population, both in rural and urban areas. Lack of competent diagnostic laboratories in resource-poor countries has been alarming not only in rural and remote areas, but a large number of laboratories in big cities are also without high levels of diagnostic competence. Moreover, these are the only ones to serve vast population with different disorders⁴. Majority of diagnostic laboratories will not be able to measure 25-hydroxyvitamin D in their premises.

The future multi- component plans to address vitamin D deficiency in infants and their mothers in India¹ or elsewhere should include, apart from vitamin D₃ supplementations, a watch on the post-supplementation vitamin D₃ levels. A daily supplementation of 1000 IU of vitamin D₃ may fail to bring levels to a minimum of 75 nmol/l in 20-30 per cent cases⁵.

Last but not least, academic or research institutions and the regional or central laboratories with facilities for radioimmunoassay or enzyme linked immunosorbent assay should assist peripheral health care centres with their external quality assessment for 25-hydroxyvitamin D measurements. Recently, two state-of-art reference measurement procedures for serum 25 hydroxyvitamin D₃ and D₂ measurements have been standardized to enable calibration traceability and method validation⁶.

Subhash C. Arya* & Nirmala Agarwal

Sant Parmanand Hospital

18 Alipore Road

Delhi 110 054, India

*For correspondence:

subhashbhapaji@gmail.com

References

1. Jain V, Gupta N, Kalaivani M, Jain A, Sinha A, Agarwal R. Vitamin D deficiency in healthy breastfed term infants at 3 months & their mothers in India: Seasonal variation & determinants. *Indian J Med Res* 2011; 133 : 267-73.
2. Karim SA, Nusrat U, Aziz S. Vitamin D deficiency in pregnant women and their newborns as seen at a tertiary-care center in Karachi, Pakistan. *Int J Gynaecol Obstet* 2011; 112 : 59-62.
3. Sahu M, Bhatia V, Aggarwal A, Rawat V, Saxena P, Pandey A, *et al*. Vitamin D deficiency in rural girls and pregnant women despite abundant sunshine in northern India. *Clin Endocrinol (Oxf)* 2009; 70 : 680-4.
4. Mundy CJ, Bates I, Nkhoma W, Floyd K, Kadewele G, Ngwira M, *et al*. The operational quality and costs of a district hospital laboratory service in Malawi. *Trans R Soc Trop Med Hyg* 2003; 97 : 403-8.
5. Schwalfenberg GK. A step in the right direction. *CMAJ* 2010; 182 : 1763.
6. Stepman HC, Vanderroost A, Van Uytvanghe K, Thienpont LM. Candidate reference measurement procedures for serum 25-hydroxyvitamin D₃ and 25-hydroxyvitamin D₂ by using isotope-dilution liquid chromatography-tandem mass spectrometry. *Clin Chem* 2011; 57 : 441-8.