Reporting units of Thyroid Stimulating Hormone in Newborn Thyroid Screening

In the paper by Verma, *et al*. [1], the words 'capillary TSH' and 'DBS (dried blood spot)' clarified the source of blood (heel prick) and the assay method, but not the reporting units of thyroid stimulating hormone (TSH), *i.e.*, whole blood units (WBU) or serum units (SU). As the DBS assay output can be set to report TSH in WBU, or else the output can be multiplied by a factor of 2.2 (to adjust for hematocrit) to report in SU, the interpretation of a cut-off of 20 mU/L is not self-evident. In many earlier articles [2], DBS output for TSH is in WBU. A cut-off of 20 mIU/L TSH reported in WBU would be equivalent to a TSH of 44 mIU/L in SU. In a vast country like India, some newborn screening (NBS) programs may assay TSH from a cord blood sample in a routine laboratory (which would automatically report in SU), whereas some doctors may send postnatal heel prick DBS samples to a centralized NBS laboratory, which may report in WBU. To maintain uniformity in the country, the ISPAE guidelines [3] recommend reporting DBS TSH in SU rather than WBU.

Verma, *et al*. [1] mentioned 'capillary TSH' while quoting from a publication from my center [4], where we reported in SU. From this I conclude that they mean SU while talking about their own 'capillary' TSH results. On the other hand, they have also quoted papers, where the authors have clearly used WBU [5] presumably interchangeably with their own reporting units. A clarification from the authors regarding their reporting units is thus clearly needed.

There are also a couple of methodological observations also. While drawing ROC curves for the screening TSH cut-off, the true positives and true negatives of those infants who were below the chosen cut-off of 20 mU/L are not known. Therefore, this method may not be appropriate for justifying the screen cut-off for NBS. Secondly, the results of confirmatory test of infants with screen TSH between 10 and 19.9 mU/L revealed three infants to have congenital hypothyrodism. However, we do not know how many may have been positive if, for example, screen cut-off of TSH was kept between 5 and 10 mU/L. It is not clear therefore as to what result has been used to conclude that newborns with screen TSH between 10 and 19.9 mU/L should have a second screen.

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Editor's Note: The corresponding author of the manuscript in question did not respond to the queries.