Cord Blood TSH for Screening of Hypothyroidism: Is it Justified?

In a recent article, Gupta, *et al*. [1] reported an important aspect of thyroid metabolism which has great impact on neonatal screening strategy for congenital hypothyroidism. Prime consideration for a newborn screening program is the cost effectiveness of the exercise; the main determinants of which are the incidence of the disorder, cost of the test as well as the false positive rate.

Authors quote that incidence of congenital hypothyroidism in India detected by neonatal screening is 1:2500 to 1:2800 [2]. However, it is much more common according to recent reports. Authors have not quoted a more recent study [3] which has reported the incidence of congenital hypothyroidism as 1:1700. The ICMR multricentric study [4] covering about 100,000 neonates found the disorder to be occurring with even greater frequency of 1:900 in Tamilnadu and 1:1131 overall. Other published reports (quoted in the paper) - as well as the authors, own data also shows the incidence to be nearer to 1:1000 than 1:2500 [1,5] .

Authors rightly say that perinatal factors affect the cord blood thyroid stimulating hormone (TSH) level. They feel that corrections should be designed to give due consideration to perinatal factors in order to interpret TSH levels. It will be very difficult to design and validate such corrections. Instead, it is advisable to adopt the time-tested approach of screening by heel prick sampling once the TSH surge is over. Blood sampling on day 3 or later is also performed when multianalyte screening is undertaken.

We opine that congenital hypothyroidism – a preventable cause of mental retardation – occurs with significant frequency in India, and a neonatal screening program at national level is the need of the hour. Dry blood sample collected by heel prick after day 3 or day 4 of life is better strategy for neonatal screening as it may avoid false positives because of perinatal factors. This may reduce unnecessary parental anxiety and costs.

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AUTHOR'S REPLY

An input on the incidence of congenital hypothyroidism (CH) is welcome. Studies vary a lot in their estimation of incidence of CH; depending largely on the geographical area with highest being reported from Southern States of India [1]. Prevalence of iodine deficiency too may influence TSH levels [2]. Furthermore, in areas of high incidence of CH, the cost burden due to recall rates would actually be lower for each positive case than in those with a lesser incidence.

With the policy of early discharge after delivery, there is always a possibility to lose subjects in follow up. Parents too are not always receptive to allow pricking the newborn to screen for a non-apparent problem. For screening of a relatively common and treatable condition like congenital hypothyroidism a slightly higher costing due to recall in better than losing of subjects. Nevertheless, we agree that 3rd/ 4th day blood sample is ideal, if collection is ensured and multiple disorders are being screened.

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