The Indian Journal of Pediatrics
https://doi.org/10.1007/s12098-018-2801-2

CORRESPONDENCE

Normative Data for Thyroid Stimulating Hormone for Screening of Congenital Hypothyroidism: Correspondence

Zheng Feei Ma [1,2]

Received: 23 August 2018 / Accepted: 24 September 2018

To the Editor: This letter is regarding the recent publication entitled "Normative Data for Thyroid Stimulating Hormone for Screening of Congenital Hypothyroidism" by ICMR Task Force on Inherited Metabolic Disorders published in IJP in 2018 [1]. The study findings reported by the ICMR Task Force are both relevant and interesting to the countries that employ thyroid stimulating hormone (TSH) as the primary screening test for congenital hypothyroidism (CH). Over the last two decades, there is an increasing incidence of congenital hypothyroidism, which might be due to several factors including a lower TSH cut-off for CH screening and an increase in preterm infants [2]. The cross-sectional study covered five different regional laboratories in India and a total of 104,006 samples were analysed for TSH. The authors found that TSH concentration decreased steadily from 24 h to 168 h and males had a higher TSH concentration than females. The authors also proposed that after correcting for gender, age at sampling and birth weight, a TSH concentration of 10 mIU/L could be the appropriate TSH cut-off beyond which a second sample should be obtained. Overall, the study findings by the authors have provided some valuable and important information especially the use of TSH from heel prick samples to screen CH among newborns aged 24 h to 7 d in India.

Since the signs and symptoms of congenital hypothyroidism are usually subtle, the newborns with CH are undiagnosed at birth and this could potentially lead to the most severe outcomes of CH because of the delayed diagnosis [2]. Dried capillary blood from heel prick is usually used to screen for CH. Therefore, this study also adds to a growing body of observational data suggesting that the use of TSH in newborn screening programs to screen for CH is a cost-effective approach. CH is one of the most common disorders detected in newborn screening programs with an incidence ranging from 1:2000 to 1:4000. It is also one of the most common preventable causes of intellectual disability in newborns. This is because TSH controls thyroid hormone production, which is important for normal growth and neurologic development in infants [3, 4]. In most of the cases, the cause of CH is due to an abnormal development of the thyroid gland (*i.e.* thyroid dysgenesis) [5].

One of the limitations in this study is that the preterm infants were not recruited. With the increasing survival of many premature infants, it is possible that transient thyroid function abnormalities in premature infants might have become more common [4]. Therefore, such thyroid function abnormalities should be interpreted with caution, particularly in preterm infants [4]. Future studies should include the TSH measurement of preterm infants when interpreting the results of TSH for CH.

Compliance with Ethical Standards

Conflict of Interest None.

References

1. ICMR Task Force on Inherited Metabolic Disorders. Normative data for thyroid stimulating hormone for screening of congenital hypothyroidism. Indian J Pediatr. 2018. https://doi.org/10.1007/s12098-017-2550-7.
2. Agrawal P, Philip R, Saran S, et al. Congenital hypothyroidism. Indian J Endocrinol Metab. 2015;19:221–7.
3. Ma ZF, Skeaff SA. Assessment of population iodine status. In: Pearce EN, editor. Iodine Deficiency Disorders and their Elimination. Cham: Springer; 2014. p. 15–28.
4. Cherella CR, Wassner AJ. Congenital hypothyroidism: insights into pathogenesis and treatment. Int J Pediatr Endocrinol. 2017;2017:11.
5. Ford GA, Denniston S, Sesser D, Skeels MR, LaFranchi SH. Transient versus permanent congenital hypothyroidism after the age of 3 years in infants detected on the first versus second newborn screening test in Oregon, USA. Horm Res Paediatr. 2016;86:169–77.

✉ Zheng Feei Ma
Zhengfeei.Ma@xjtlu.edu.cn

[1] Department of Public Health, Xi'an Jiaotong-Liverpool University, Suzhou, China

[2] School of Medical Sciences, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia

Published online: 18 October 2018