

OP 11

Impact of Lowering Neonatal TSH Cut-Off Value in the New-born Screening Program for Detecting Congenital Hypothyroidism

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Background: The national guidelines for management of congenital hypothyroidism (CH) in Sri Lanka, advocates the cut-off value of thyrotrophin (TSH) level as above 20 mIU/L for notification by the heel-prick blood spot screening program. The impact generated by the application of this cut-off is largely unknown.

Objectives: To determine the impact of lowering the cut-off for detecting CH babies in year 2021 in the new-born screening program run at the Nuclear Medicine Unit (NMU), Faculty of Medicine, University of Ruhuna.

Methods: All the babies who were screened by the NMU in year 2021 were included in the study. The usual cut-off level of 20 mIU/L used for the notification has been lowered to 15 mIU/L. All babies between 15-20 mIU/L were considered as screening positives. They were requested to get the serum TSH levels done at their relevant paediatric clinics and the results were obtained by contacting them over the phone.

Results: Total of 137,879 babies out of 144,126 live births in the region were subjected to CH screening in 2021. Of them 272 babies were detected and referred as screening positive (neonatal TSH>15 mIU/L). There were 52 babies with TSH levels between 15-20 mIU/L and 7 became confirmed positive (serum TSH>10 mIU/L) while the remainder were confirmed negative (serum TSH<10 mIU/L). The total confirmed positive number in 2021 was 107 while the outcome of 10 babies is yet to be traced. Hence, lowering the nTSH cut-off could contribute to 6% of the total CH babies identified in year 2021.

Conclusions: Lowering the neonatal TSH cut-off for notification has been able to detect neonates who would not be detected if the universal cut-off of above 20 mIU/L was used. The impact of detecting these babies before developing any neurophysiological symptoms need to be assessed in follow up studies.

Keywords: *Congenital hypothyroidism, Cut-off value, Screening positive*

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