Indian Academy of Pediatrics (IAP)

nRICH

Newer **R**esearch and recommendations **I**n **C**hild **H**ealth

Lead Author
Vaman Khadilkar

Co-Author
Nikhil Lohiya

UNDER THE AUSPICES OF THE IAP ACTION PLAN 2023

Upendra Kinjawadekar
IAP President 2023

GV Basavaraja
IAP President 2024

Remesh Kumar R
IAP President 2022

Vineet Saxena
IAP HSG 2022-23

Dear fellow IAPans,

nRICH

Newer **R**esearch and recommendations **I**n **C**hild **H**ealth-aims to bring you the abstracts of some of the breakthrough developments in pediatrics, carefully selected from reputed journals published worldwide.

Expert commentaries will evaluate the importance and relevance of the article and discuss its application in Indian settings. nRICH will cover all the different subspecialities of pediatrics from neonatology, gastroenterology, hematology, adolescent medicine, allergy and immunology, to urology, neurology,vaccinology etc. Each issue will begin with a concise abstract and will represent the main points and ideas found in the originals. It will then be followed by the thoughtful and erudite commentary of Indian experts from various subspecialties who will give an insight on way to read and analyze these articles.

I'm sure students, practitioners and all those interested in knowing about the latest research and recommendations in child health will be immensely benefitted by this endeavor which will be published online on every Monday.

Happy reading!

Upendra Kinjawadekar
National President 2023
Indian Academy of Pediatrics

Chairperson

Upendra Kinjawadekar

Convenor

Vijay Yewale

IAP nRICH team

Arun Bansal

Vaman Khadilkar

Indu Khosla

Srinivas Murki

Nitin K Shah

Tanu Singhal

Rhishikesh Thakre

Prakash Vaidya

SK Yachha

Comparison of developmental outcomes in children with permanent and transient congenital hypothyroidism

Vaman Khadilkar[1], Nikhil Lohiya[2]

Senior Consultant Paediatric Endocrinologist, Jehangir Hospital, HCJMRI, Pune, India [1]
Consultant Paediatric Endocrinologist, Silver Lining Paediatric Super Specialty Center, Nagpur, India [2]

BASED ON ARTICLE

Büyükavcı MA, Dundar I. Comparison of developmental outcomes in children with permanent and transient congenital hypothyroidism. J Pediatr Endocrinol Metab. 2023 Feb 17. doi: 10.1515/jpem-2022-0539. Epub ahead of print. PMID: 36794655.

SUMMARY

Background: Congenital hypothyroidism (CH) is the most common cause of preventable cognitive impairment in children. CH may be transient or permanent. This study aimed to compare the developmental evaluation results of transient and permanent CH patients and to reveal any differences.

Methods: In this retrospective analysis children diagnosed with CH from 2015 to 2020 were included. A total of 118 children were included in the study with a follow-up duration of 3 yrs minimum. The diagnosis and management of congenital hypothyroidism were based on the European Society of Pediatric Endocrinology guidelines for congenital hypothyroidism. The authors used Guide for Monitoring Child Development (GMCD) questionnaire tool for developmental assessment.

Results: In all 52 (44.1%) were female, and 66 (55.9%) were male. Permanent CH was observed in 20 (16.9%) cases & 98 (83.1%) were diagnosed with transient CH. The development of 101 (85.6%) children was compatible with their age, whereas 17 (14.4%) children had a delay in at least one developmental area. All 17 patients had a delay in expressive language. Developmental delay was detected in 13 (13.3%) of those with transient CH and 4 (20%) with permanent CH.

Conclusions: There is difficulty in the expressive language in all cases of CH with developmental delay. No significant difference was found between the developmental evaluations of permanent and transient CH cases. The results revealed the importance of developmental follow-up, early diagnosis and interventions in those children. GMCD is thought to be an important guide to help monitor the development of patients with CH.

Commentary: Congenital hypothyroidism leading to irreversible developmental delay can be prevented by its early detection and treatment. Universal and not high-risk screening is the only way to avoid this potentially preventable cause of mental sub-normality. The prevalence of congenital hypothyroidism varies from 1:727 to 1:2640 (1). Delayed diagnosis and late initiation of treatment with levothyroxine can lead to irreversible developmental delay in these children.

In the above-described research, authors have assessed developmental delay in CH children using a questionnaire-based GMCD method. They have found a delay in at least one developmental domain among 17.7% of children and all of them had an expressive language delay. Thus language involvement in congenital hypothyroidism is almost universal. Also, delayed treatment was a factor common in all children with developmental delays. Furthermore, the developmental delay in children with transient congenital hypothyroidism emphasizes the need for treating neonates with transient TSH elevation. This finding however needs more evidence.

The GMCD tool used by the authors although has been validated in India (2) it is not as comprehensive as Bailey's Scale of Infant Development (BSID). One of the studies done from Turkey that used BSID has shown that some children with congenital hypothyroidism can have mild to moderate neurodevelopmental retardation, despite early diagnosis and treatment (3). GMCD is a questionnaire-based tool where as more objective scales may be better in recognizing developmental defects early. Previous reports suggests that with increase in the degree of severity of congenital hypothyroidism at the time of diagnosis the full scale IQ, Verbal IQ & Performance IQ decreased in adulthood (4). Children with transient congenital hypothyroidism had a lower intelligence quotient at the age of 7–8 years than matched controls has been previously reported (5).

In conclusion, new-born thyroid screening should be universally performed, all children diagnosed with congenital hypothyroidism should be treated immediately and developmental assessment of these children should be performed on a regular basis so that early interventions can be initiated. One of the commonest affected function is language development.

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