



Etiological Study Of Autism and Assessment By ISAA(Indian Scale For Assessment Of Autism) For Diagnosis Of Autism Spectrum Disorder In Children at Hi-Tech Medical College and Hospital,Bhubaneswar

Dr.Gautam Tripathy¹Dr.Sasmita Devi Agrawal²Dr.Sidhant Swarup³

Professor, Dept. of Paediatrics, Hi-Tech Medical College & Hospital ,Bhubaneswar

PG resident, Hi-Tech Medical College & Hospital, Bhubaneswar

Date of Submission: 15-12-2020

Date of Acceptance: 21-12-2020

BACKGROUND: Autism Spectrum Disorder (ASD) usually presents in early developmental period, in children less than 3 years usually with poor social relations, verbal and nonverbal communications and restricted and repetitive behaviour[1]. The prevalence of ASD is increasing rapidly, especially in urban population of developed as well as developing nations. According to recent database , Every 1 in 68 children are diagnosed with autism spectrum disorder, leading to a considerable health care and economic burden on society[2][3]. ASD is multifactorial Combined interaction of genetic and environmental factors has been proposed as the possible neuropathogenesis mechanism underlying ASD. Recently DSM V criteria have combined under a single roof all the autistic disorders including Asperger syndrome and pervasive developmental disorder-not otherwise satisfied[4]. Autistic children are more likely to have hyperactivity, inattention, sleep abnormalities and epilepsy, as compared to general population. INCLN(INDT-ASD) tool and ISAA are commonly used in India for diagnosing and calculating severity of autism for disability certification in our country[5][6]. The other tools for Autism assessment are Childhood Autism Rating Scale (CARS), Autism Behaviour Checklist (ABC), Applied Behaviour Analysis (ABA), M-CHAT (modified Check List for autism)[7][8]. Onset of ASD symptoms typically occurs by age 3yr, although symptoms may not fully manifest until school age or later, and some research suggests symptoms can emerge between 6 and 18months of age. More severely affected children are more likely to be identified and reliably diagnosed at younger ages than milder cases. Early markers of autism are no babbling by 12months, not waving bye-bye by 12 months, no single words by 16 months, no two-

wordspontaneous (not just echolalia) phrases by 24 months and loss of any language or social skills at any age[9].

Keywords: Autism Spectrum Disorder; ISAA; Applied Behavioural Analysis; Social Communication and Interaction

I. OBJECTIVE:

To determine the diagnostic validity and accuracy of Indian Scale for Assessment of Autism (ISAA) in children aged 1.5-9 year at high risk of autism, and to ascertain the level of agreement with Childhood Autism Rating Scale (CARS) and INCLN(INDT-ASD)[10][11].

Design: Diagnostic and Accuracy study

Setting: Tertiary-level hospital(Hi-Tech Medical College & Hospital)

Duration:From Jan 2019 to Aug 2019

Participants: Children aged between 1.5 and 9 year and considered to be at a high risk for autism (delayed development, and age-inappropriate cognition, speech, social interaction, behaviour or play) were recruited. Those with diagnosed Hearing impairment, Cerebral palsy, Attention deficit hyperactivity disorder or Pervasive developmental disorders (PDD) were excluded.

II. METHODS:

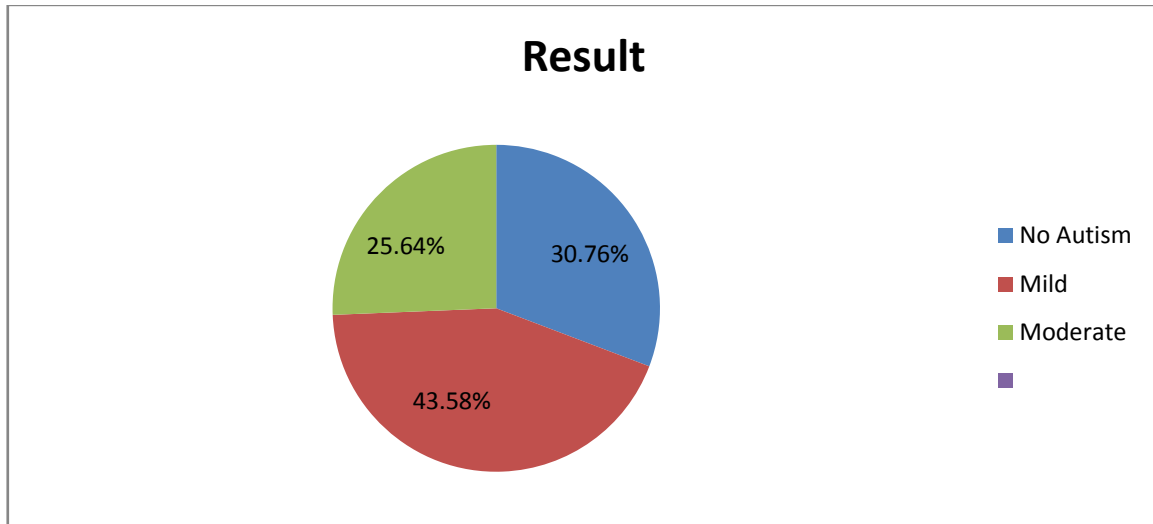
Eligible children underwent a comprehensive assessment according to assessment of different parameters of ISAA tool and results were compared to the INCLN(INDT-ASD) and CARS scoring.

III. RESULT & STATISTICAL ANALYSIS:



Out of 39 eligible children attending Paediatric Neurology OPD between Jan2019 to Aug2019, 27(69.2%) were Autistic Out of which 17(62.9%) were Mild Autistic and 10(37.03%) were moderately Autistic. From this study the

Sensitivity of ISAA is 90% and Specificity is 77.7%. The Positive predictive value is 0.93 and the Negative predictive value is 0.7as compared to INCLN-INTD.



IV. CONCLUSIONS:

The reliability and validity of ISAA for diagnosis and assessment for severity of Autism is good. The role of ISAA in 1.5 -9 year old children at high risk for Autism is limited to identifying and certifying Autism at ISAA score of 70.

REFERENCE:

- [1]. American Psychiatric Association. Autistic Spectrum Disorders. In: Diagnostic and Statistical Manual of Mental disorders. 5th ed. Arlington VA: American Psychiatric Association; 2013.p.50-9
- [2]. Baio J, Wiggins L, Christensen DL, Maenner MJ, Daniels J, et al. (2018) Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years - Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2014. *MMWR Surveill Summ* 67(6): 1-23.
- [3]. Zhang JX, Zhang R, Wang XL, Beijing Da, XueXue, et al. (2017) Prevalence of autism spectrum disorders in children aged 0-6 years in China: a meta-analysis 49(5): 798-806.
- [4]. Lord C, Bishop SL (2015) Recent advances in autism research as reflected in DSM-5 criteria for autism spectrum disorder. *Annu Rev Clin Psychol* 11: 53-70.
- [5]. Juneja M, Mishra D, Russell PS, Gulati S, Deshmukh V (2017) INCLN Diagnostic Tool for Autism Spectrum Disorder (INDT-ASD): development and validation. *INCLN Study Group. Indian Pediatr* 51(5):359-365. *Autism* 21(3): 368-374.
- [6]. 16. National Trust Web based Intervention Resource Centre. Indian Scale for Assessment of Autism. Available from: www.nationaltrust.co.in. Accessed Aug 19, 2019.
- [7]. Schopler E, Reichler RJ, Renner BR. The Childhood Autism Rating Scale (CARS). Los Angeles: Western Psychological Services, Inc; 1988.
- [8]. Freeth M, Sheppard E, Ramachandran R, Milne E. A crosscultural comparison of autistic traits in the UK, India and Malaysia. *J Autism Dev Disord*. 2013;43:2569-83.
- [9]. Grapel JN, Cicchetti DV, Volkmar FR (2015) Sensory features as diagnostic criteria for autism: sensory features in autism. *Yale J Biol Med* 88(1): 69-71.
- [10]. Russell PSS, Daniel A, Russell S, Mammen P, Abel JS, RajLE, et al. Diagnostic accuracy, reliability and validity of Childhood Autism Rating Scale in India. *World J Pediatr* 2010;6:141-7.
- [11]. Ministry of Social Justice and Empowerment. Scientific Report on Research Project for Development of Indian Scale for Assessment of Autism. New Delhi: Government of India; 2009.