THE SPECTRUM OF CO-MORBIDITIES IN CHILDREN WITH ASD (AUTISM SPECTRUM DISORDER): A RETROSPECTIVE STUDY

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INTRODUCTION

- Estimates from the CDC's Autism and Developmental Disabilities Monitoring Network - about 1 in 44 children
- INCLEN study (2011) - prevalence of ASD around 1 in 89 children.
- It not only affects the life of the affected individual, but also their immediate caregivers, families, and society
- In addition to the core ASD symptoms, children with ASD may present with additional comorbidities - identifying these conditions is essential, as most could exacerbate or stimulate the behavioral abnormalities in these children
- Appropriate management of these comorbidities improves the child's behavior – May point to an underlying patho-mechanism requiring a more advanced approach to treatment
- Occurrence of comorbidities may contribute to increased risk of mortality associated with ASD - treatment of comorbidities in these children could lead to a significant betterment of their quality of life
- Co-occurrence patterns among co-morbidities in ASD may help to uncover the underlying etiologies associated with ASD
- Most of these comorbid conditions are treatable

OBJECTIVES

- To study the spectrum of co-morbidities in children with ASD

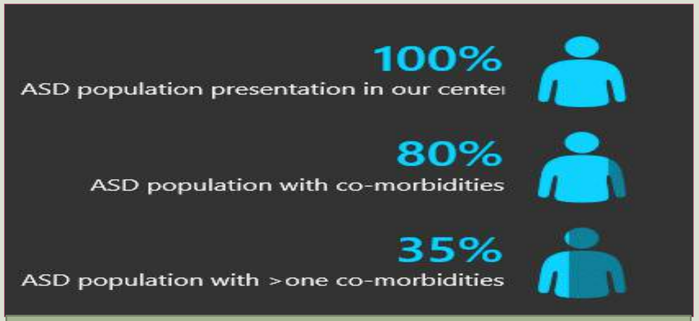

Fig 1: Proportion of children with comorbidities

METHODOLOGY

- Retrospective Study of patients between January 2017 to March 2021
- Study population: Children attending to the Autism Clinic, Child Neurology Division, AIIMS, New Delhi

Inclusion criteria:

- Children aged 2-18 years, with ASD (DSM 5 criteria) 2. Parental consent

Exclusion criteria:

- Parents unwilling for participation
- Detailed history from parents was obtained using a standard clinical proforma
- Evaluation for symptom severity and behavioural co-morbidities were done by CARS, Autism Behaviour Checklist (ABC), and Childhood Behaviour Check List (CBCL)
- Based on the co-morbidities and severity the standard form of behavioural therapy and medications were prescribed - children were followed in Autism clinic at 1-3 monthly intervals

RESULTS

- 1872 children [1582 males (84.5%); 290 females (15.5%); Median age: 5.6 years(IQR: 5.1 - 8.5years]
- Proportion of children with comorbidities - 80% (1499/1872); 35% had more than one comorbidity [Fig 1]
- Attention deficit hyperactivity disorder - most common behavioural comorbidity (57.55%), followed by disruptive behaviour (4.51%) and obsessive-compulsive disorder (1.42%) - **62% of the children had a psychiatric comorbidity**
- Among systemic abnormalities, neurological comorbidities (global developmental delay/intellectual disability, sleep abnormalities, epilepsy, isolated speech/ language delay and sensory processing disorder) were most common (52.6%) - Mean duration of follow-up - 28.9 +/- 11.46 months [Fig 2 - 4]
- Post-behavioural therapy on follow-up, significant (p<0.0001) improvement in core features was observed as measured by mean CARS score. Significantly high ABC scores were observed in patients with speech/language delay, specific learning disability, sensory processing disorder, wandering & genetic disorder [Table 1]

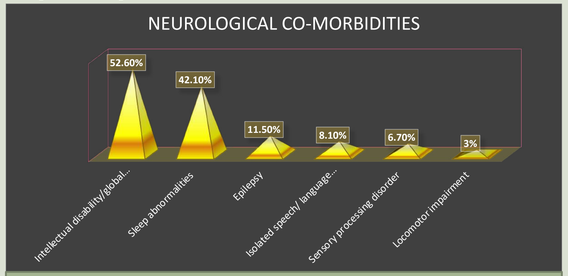

Fig 2: Diversity of neurological comorbidities

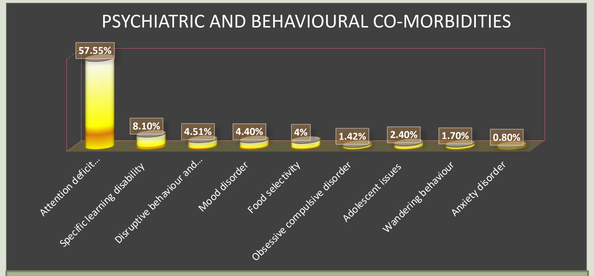

Fig 3: Diversity of Psychiatric and behavioural co-morbidities

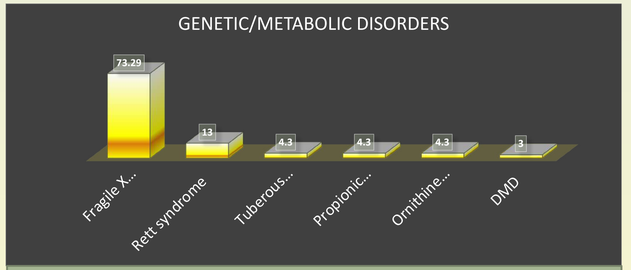

Fig 4: Diversity of genetic/metabolic disorders

Table 1 - Outcome of behavioral therapy in children with ASD

Total patients (N = 1872)	Severity of ASD		Mean CARS score (± 2SD)	Mean ABC score (± 2SD)
	Mild to moderate (CARS ≤ 37)	Severe (CARS > 37)		
Pre-therapy	1074	798	36.92 ± 5.00	83.34 ± 16.06
Post-therapy	1486	386	34.27 ± 4.07	73.74 ± 13.61
p-value	< 0.001		<0.0001	<0.0001

CONCLUSIONS

- The presence of comorbidities seen in 80% of the patients did not affect the severity of ASD
- Post-therapy, significant improvement in their functional outcome was observed
- A holistic scrupulous approach is necessary for best outcome

REFERENCES

1. Aathira, R., Gulati, S., Tripathi, M., Shukla, G., Chakrabarty, B., Sapra, S., Dang, N., Gupta, A., Kabra, M., & Pandey, R. M. (2017). Prevalence of Sleep Abnormalities in Indian Children With Autism Spectrum Disorder: A Cross-Sectional Study. Pediatric Neurology, 74, 62–67
2. Verma, V., Paul, A., Amrapali Vishwanath, A., Vaidya, B., & Clement, J. P. (n.d.). Understanding intellectual disability and autism spectrum disorders from common mouse models: Synapses to behaviour. Open Biology, 9(6), 180265
3. Sivertsen, B., Posserud, M.-B., Gillberg, C., Lundervold, A. J., & Hysing, M. (2012). Sleep problems in children with autism spectrum problems: A longitudinal population-based study. Autism: The International Journal of Research and Practice, 16(2): 139–150

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