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Pervasive Developmental Disorder and its Associated Co-Morbidities from a Tertiary Care Centre of West Bengal: A Cross Sectional Study

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| **Abstract** | **Original Research Article** |

Pervasive developmental disorder (PDD) is a group of neurodevelopmental disorder affecting early childhood. It is often associated with number of comorbidities. There is paucity of data regarding this specially from eastern part India. In this study the phenomenology and comorbidities associated with PDD has been looked for. It was a cross sectional study. Most common comorbidity associated with PDD was found to be Mental retardation followed by seizure disorder.
Keywords: Pervasive Developmental Disorder, Comorbities, Mental retardation.

INTRODUCTION

Pervasive Developmental Disorders (PDD) is a group of heterogeneous disorder characterized by deficits in reciprocal social interaction, communication and repetitive behaviours[1]. According to ICD-10 they are comprised of Childhood autism, Atypical Autism, Rett's syndrome, other childhood disintegrative disorder; Overactive disorder associated with mental retardation and stereotyped movements, Asperger's syndrome, other pervasive developmental disorders and Pervasive developmental disorder unspecified[2]. Though earlier epidemiological studies have suggested a prevalence rate of PDD is around 4 per 10000, recent reviews have shown much higher rates [3]. In a study by Fombonne et al. they found prevalence of 13/10000 for autistic disorder, 21/10000 for pervasive developmental disorders not otherwise specified, 2.6/10000 for Asperger disorder, and 2/100000 for childhood disintegrative disorder [4]. Overall understandings from review articles now suggests prevalence of PDD is around 13-30/ 10,000 [5]. Boys outnumber girls in the prevalence of PDD as most of neurodevelopmental disorders. The gender difference is still poorly understood. Baron-Cohen has speculated PDD is a disorder of extremely male brain [6]. The male to female ratio is estimated to be around 2:1 to 4:1.

PDD are associated with multiple co-morbidities. Most common associated condition found in children of PDD is mental retardation. Severe to profound mental retardation (MR) is found in about 40%, mild to moderate in 30% and normal intellectual functioning in another 30% children of PDD [7]. Other medical conditions that may be associated with PDD are cerebral palsy, tuberous sclerosis, fragile X syndrome, neurofibromatosis, phenylketonuria, Down's syndrome, congenital rubella syndrome etc.

In India Manjunatha et al. did a cryptogenetic investigation in autistic children with the aims of finding the association and prevalence of fragile X syndrome in autistic children [8]. Though none of the six cases studied had fragile X chromosome, fragile sites were noted in autosomes 1, 2, 3, 5 and 6.

Bala subramanian et al. compared children with intellectual disability and autism and those with intellectual disability alone and found that 50.6% cases with fragile X syndrome and 11.6% cases with other chromosomal anomalies in the group with intellectual disability and autism and 23.3% cases with Fragile X syndrome and 30.5% cases with other chromosomal anomalies in those with intellectual disability alone [9]. Fragile X syndrome (FXS) is the most commonly inherited form of autism.

Still there is limited number of studies from our country in this aspect and we found that this area needs further research. In our study we tried to evaluate the phenomenology and comorbidites associated with patients of PDD in a tertiary care centre in eastern India.

MATERIALS AND METHODS

It was a cross-sectional study. Consecutive children (under 18 years of age) diagnosed as PDD as per ICD-10 and willing to give consent were included in the study. Their IQ was measured by using Binet Kamat test for intelligence (BKT) [10] or obtained from their social or developmental maturity [11]. A semi-structured proforma was used for sociodemographic variables and clinical variables.

RESULTS AND DISCUSSIONS

This was a cross-sectional mixed method study. Mean age of children was 7.8 years; mean IQ was 54.23. Among 62 children 46(74.19%) were male and 16(25.8%) were female.35 (56.45%) were from rural and 27(43.55%) were from urban background. 38 of them (61.29%) belonged to Hindu religion and rest 24 (38.71%) were Muslim. 41.81% had a family income more than Rs. 10000. Among PDD Childhood Autism was most common (33.87%) followed by PDD-unspecified which was 32.26% (see table-1)

Mental retardation is a significant association with PDD patients. We have found that 75.8% patients having MR in any form (IQ<70). Seizure disorder and attention deficit hyperactive disorder are two another common co morbid conditions associated with ASD. Seizure disorder was found in 21 cases and ADHD in 11 children (Table-2)

Table-1: Table showing individual diagnosis among PDD

Diagnosis	Number	Percentage
Childhood Autism	21	33.87%
Atypical Autism	5	8.06%
Childhood disintegrative disorder	3	4.84%
Overactive disorder with MR and stereotyped movements	11	17.74%
Asperger's Disorder	2	3.23%
PDD, Unspecified	20	32.26%

Table-2: Table showing co-morbidities associated with ASD

Co-morbidities	Number	Percentage
Mental Retardation	47	75.8%
Seizure Disorders	21	33.88%
ADHD	11	17.74%
Others	5	8.06%

CONCLUSION

With increasing prevalence clinician should be aware about the clinical features and associated comorbidities associated with PDD. PDD is more common in boys than girls. Mental retardation is the most common associated abnormality found in PDD. Seizure disorders and ADHD are also found in children having PDD in a significant number. Comorbidities should be looked for and addressed to improve the qualities of life in PDD.

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