



Tic Disorders in Children with Asperger Disorder

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ABSTRACT

Asperger syndrome is an autistic spectrum disorder that is often associated with tic disorders. Different rates of co-morbidity have been reported with multiple factors playing a role. The aim of the study was to discuss the clinical characteristics of a population of subjects with Asperger syndrome and tic disorders (n = 38). 73.68% subjects had a diagnosis of chronic motor tics while 26.32% had Tourette's syndrome. An association between level of tic severity and severity of mental retardation was noted. There is a further need for large scale prospective studies to address the relationship between tic disorders, autism spectrum disorders and Asperger disorder in general.

Keywords : Tourette syndrome, Asperger disorder, Tic disorders.

INTRODUCTION

Asperger Disorder is a pervasive developmental disorder characterized by good verbal skills and marked paucity of non verbal communication, with or without intellectual deficits. It is a distinct syndrome from autism and has gained recognition and importance over the years (Wing 1981; Klin et al., 2000). Asperger disorder is rarer than autism and has a prevalence of 0.3-8.4 per 10000 as cited across different studies (Fombonne and Tidmarsh, 2003).

Stereotyped movements and repetitive behaviors are common in Asperger disorder. These movements are closely related to tic disorders and involve the dopaminergic and glutamatergic systems in the brain. They have been linked by some authors to the obsessive compulsive spectrum disorders. (Gilchrist et al., 2001; McDougle et al., 2000; Graybiel et al., 2000).

Tourette Disorder (TD) is characterized by the occurrence of chronic multiple motor and vocal tics with age of onset being 6-8 years and a fluctuating longitudinal course (Leckman and Cohen, 2002). Abnormalities in the basal ganglia and prefrontal cortex have been observed in the disorder with the dopamine and serotonin systems being implicated (Singer and Minzer, 2003).

A number of disorders has noted the occurrence of tics in autism spectrum disorders including chronic motor and / or vocal tics and TD. The association is based on some common underlying etiologic factors since the rate of co-occurrence is higher than expected by chance (Ringman and Jankovic, 2000; Comings and Comings, 1991; Sverd, 1991).

Tic disorders and Asperger disorder share common characteristics like echolalia, palilalia, obsessive compulsive symptoms, hyperactivity, attention deficits, disinhibition and poor impulse control. Tics may take the form of stereotypies in Asperger syndrome (Rapin, 2001; Turner 1999; Stern and Robertson, 1997). It is important to study these phenomenological components in greater details to reach further conclusions. The aim of the study was to study the clinical characteristics of children and adolescents with Asperger disorder and tic disorders and TD.

MATERIAL & METHODS

The clinical group for the study consisted of 38 children and adolescents diagnosed with Asperger disorder and tic disorders

visiting as out patients in a private child psychiatric centre in Mumbai. All the participants were evaluated clinically and observations during free play and structured sessions were conducted. The details and presence of motor or vocal tics and TD was recorded. The Yale Global Tic Severity Scale (YGTSS), a semi structured clinical interview of tics phenomenology with range of scores from 0-100% was also administered (Leckman et al., 1989). The scale was administered with the assistance of parents due to poor participation from most children and adolescents.

All the children were receiving pharmacological treatment when assessed for the study. The medication included atypical antipsychotics and anticonvulsants which were administered for the tics as well as comorbid problems like hyperactivity, aggression and self injurious tendencies.

Intellectual assessment was conducted using the Vineland Adaptive Behavior Scales (Sparrow et al., 1984). The sample was further divided into two groups based on the developmental quotient (DQ) scores. Group A was children with DQ < 20 and Group B with DQ > 20.

RESULTS

Out of the total sample of 38 children and adolescents with Asperger disorder, 30 were males (78.95%) while 8 were females. The mean age of the group was 12.7 ± 4.3 years. The mean YGTSS score of the group was 36.4 ± 8.6 . Out of the 38 subjects, 14 had a DQ score of below 20 (36.84%) while 24 had a score above 20 (63.16%). A positive family history for tic disorders was detected in 11 subjects (28.95%). Among the 38 subjects with Asperger Disorder, 28 had a diagnosis of chronic motor tics (73.68%) while 10 had a diagnosis of TD (26.32%). A family history of tic disorders was found in 7 cases where the children had a diagnosis of TD (70%) while in only 4 cases that had been diagnosed with chronic motor tics (14.29%). Out of the 38 children, 31 were on Risperidone (dose range 1-2mg / day) (81.58%) while 3 each were on Olanzapine (dose range 5-7.5mg / day) and Carbamazepine (dose range 100-400mg / day) respectively.

There was a significant difference between the YGTSS scores between the groups with a DQ below 20 and DQ above 20 (Table 1).

DISCUSSION

The number of children with TD in the study was 26.32%.

Studies carried out in autism special schools and population studies have reported a rate of 4-9% in the association between autism spectrum disorders and TD (Freeman et al., 2000). The selective choice of these subjects in the study probably qualifies as a reason for high rates reported here. School population studies have reported much lower rates of TD in normal school based children than that seen amongst those with autism spectrum disorders (Wang & Kuo, 2003).

The YGTSS scores are in the mild to moderate indicating that tics in Asperger's disorder are probably of lesser severity than that seen with the presence of tic disorders alone. The use of parental perceptions and judgment may be a limiting factor in this case. The severity may also be affected by the fact that all the children were on medication.

The study has many limitations. Medications may have masked the true phenomenology of tics as mentioned above. Unrolling untreated patients would probably help in getting a better picture. The selected population being focal limits the

generalization of our findings and greater exploration may be needed in areas like phenomenology and genetic basis. This is one of the few studies that explore the nature of tic disorders and TD in group solely with Asperger disorder. Most studies so far have enrolled the entire gamut of autism spectrum disorders. However large scale prospective studies are needed to address this issue further.

TABLE 1 – YGTSS SCORES IN BOTH THE DQ GROUP

GROUP 1	GROUP 2	t value	p value
(DQ < 20)	(DQ > 20)		
(n = 14)	(n = 24)		
42.1 ± 8.61	29.3 ± 8.22	2.1389	0.0003*

*** SIGNIFICANT**

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