

Co-morbidity of Obsessive Compulsive Disorder and Tourette syndrome

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Objectives: Tourette syndrome is a disease with vocal and motor tics. This disorder is co-morbid with many psychiatric disorders, among which obsessive-compulsive disorder is the most common.

Method: During a one-year period, 30 patients with Tourette disorder were studied at an adolescent psychiatry referral clinic. It was an analytical-descriptive study. Subjects were selected by convenience sampling. The control group was selected from students in Tehran schools similar to the first group in terms of age and gender. K-SADS questionnaire was used to examine the existence of obsessive-compulsive disorder in both groups. The results were analyzed with SPSS software.

Results: The apparent co-morbidity of obsessive-compulsive disorder and Tourette syndrome was seen in this study, such that 53% of patients affected with it had obsessive-compulsive disorder. Statistics obtained was higher compared to earlier data. Although this co-morbidity was somewhat different in the two genders, it was not considered statistically significant (80% girls and 48% boys).

Conclusion: More focus should be laid upon the co-morbidity between Tourette and OCD. It is recommended to study patients with Tourette syndrome more extensively in terms of co-morbidity with other psychiatric disorders, especially the obsessive-compulsive disorder.

Keywords: Tourette syndrome, Obsessive-Compulsive Disorder (OCD), co-morbidity, K-SADS Questionnaire

Submitted: 19 June 2013

Accepted: 25 Aug. 2013

Introduction

Tourette syndrome is a chronic disease, primarily associated with neuropsychiatric disabilities of childhood (1). The disease is characterized by multiple involuntary motor and vocal tics that do not necessarily coincide too (2). Recent research has shown the natural waxing and waning feature of the tics (2-3), but they decrease in late childhood (3). The prevalence rate of the disease is 1-3 per 10000 (3-4). It seems that the less severe cases have not been taken into consideration (1, 4). The co-morbidity of Tourette Syndrome (TS) and various other diseases have been widely discussed so far (5). Obsessive-compulsive disorder (OCD) (1, 3, 6, 7) as well as Attention Deficit Hyperactivity Disorder

(ADHD) are more co-morbid with TS than other psychological disorders (4, 8). Studies show that OCD is seen in 66% of TS patients (1, 8). In other studies, it has been shown that 38% of patients with Tourette have major problems that are placed within the spectrum of compulsory non-tic behaviors (1-3, 8, 9). More than half of the clinical cases show severe symptoms of obsessive behavior or thoughts (1, 8, 9), such as unwanted repetitive thoughts, actions or both (10). However, evidence of OCD has been reported in 4% of cases (1, 7)

Methods

The research was conducted for a year in the 'Child and Adolescent Psychiatry Clinic' of Roozbeh Hospital

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in Tehran, which is a well-known referral clinic in Tehran. The age range of the samples was 7-18 years. It was an analytical-descriptive study. Subjects were selected by convenience sampling. Psychiatric and clinical interviews were conducted for all participants who fell in the expected age range and were referred with a diagnosis of Tourette, or, who were diagnosed at this clinic. The standard tool applied for diagnosis was DSM-IV-TR. Patients were re-examined by other research colleagues. Then, parents were interviewed separately, from whom additional information was obtained. The control group was selected from Tehran's schools through individual matching in terms of age and gender. Wechsler IQ test was performed for all participants in both groups, they had to earn 84 scores or higher, otherwise they were excluded because some obsessive habits are less observed in patients with mental disorders disabilities. Of the 34 patients who were diagnosed with Tourette during the study year, 32 were willing to cooperate. Two people were excluded from the study because they did not earn the required scores in the Wechsler IQ test; hence 30 patients were included in the study.

After interviews, the K-SADS-PL (Kiddie-Schedule for Affective Disorders and Schizophrenia for School-Age Children – Present and Lifetime Version) questionnaire was used for both groups to determine the existence of obsessive-compulsive disorder. It is a standard questionnaire that was designed to assess and diagnose psychiatric and co-morbid disorders in children and adolescents. The questionnaire can also diagnose OCD in children and adolescents. After studying the two groups, the resultant data was fed to the computer. Finally, all data were analyzed by SPSS software, using various statistical tests such as T-Test.

Results

Thirty children with Tourette disorder, including 5 girls and 25 boys, were studied. In other words, 16.7% were female and 83.3% were male. The mean age of the patients was 13.73 years (SD=2.060), most of which (63.3%) were in the range of 10-15 years. While 80% of girls with Tourette had obsessive-compulsive disorder, this co-morbidity was observed in 48% of boys. This difference was not statistically significant, however Table (1).

Table 1. Absolute and relative frequency distribution based on OCD co-morbidity and sex

Co-morbidity Sex	Present		Absent		Total	
	Number	Percent	Number	Percent	Number	Percent
Boys	12	48	13	52	25	100
Girls	4	80	1	20	5	100
Total	16	53.3	14	46.7	30	100

The average age of patients with Tourette and co-morbid obsessive-compulsive disorder was slightly lower than of patients with Tourette syndrome alone, which was not statistically significant. Twenty percent (20%) of patients (6 patients) were referred

by school health educators, 40% (12 people) by pediatricians, 23.3% (7 patients) by neurologists, and 10% (3 patients) by GPs. Two patients (6.7%) had been brought to the clinic by their parents Table (2).

Table 2. Source of referral in clinical cases of Tourette syndrome

Source of referral	Number	%
Pediatrician	12	40
Neurologist	7	23.3
School health educator	6	20
General practitioner	3	10
Parent without prior consultation	2	6.7

Fifty three point three percent (16 patients) were not receiving any medication and 46.7% (14 patients) were taking neuroleptic *medicines* to treat their tics before entering the study. Among the 'case' group studied, four girls and twelve boys (53.3%)

exhibited co-morbidity of obsessive-compulsive disorder, while none of the subjects in the control group did so Table (3). The difference between the two groups was statistically significant ($P < 0.05$).

Table 3. Absolute and relative frequency distribution of Tourette syndrome based on OCD co-morbidity

State of Co-morbidity Group	Present		Absent		Total	
	Number	%	Number	%	Number	%
Control	0		0		30	100
Case	16	53.3	14	46.3	30	100
All	16	53.3	14	46.3	60	100

Discussion

In this small-scale study, the ratio of girls to boys with Tourette syndrome was 5 to 1, similar to some other studies. In Sweden, for example, the ratio was 6 to 1 (11-12). However, higher ratio has been reported in some studies (13-15). Some researchers have reported a smaller ratio [e.g. 3 to 1] (8, 10, 18). According to the study, 73.3% of children and adolescents with TS had been referred to other centers. While according to some studies, 1 of 6 or 1 of 7 patients with Tourette are referred for examination (11, 13). In this study, 46.7% of patients were treated for their tics. The results were similar to other studies in which 63.1% of patients with Tourette had taken medication to treat their tics or other psychiatric disorders (1, 5).

In this study, apparently boys had greater co-morbidity with obsessive-compulsive disorder. Here, the average age of patients with Tourette was a little lower than those with Tourette alone. The results were similar to other studies (5, 13). Because of co-morbidity with other psychiatric disorders, all patients with Tourette syndrome must be evaluated for psychiatric co-morbidities, especially obsessive-compulsive disorder, using a structured or semi-structured psychiatry interview. Co-morbidity affects the disease process (16). OCD worsens the course of disease (11, 13, 17). A study by Kadesjo et al has shown that 38% of patients with Tourette are affected by OCD (11). In the present study, 53.3%

of patients had obsessive-compulsive disorder in accordance with the standard K-SADS (16). K-SADS, which is an international standard used to diagnose psychiatric disorders and co-morbid problems in children and adolescents (10). It has recently been shown that although more than 50% of patients with Tourette complain of obsessive actions and thoughts, 40% of them have obsessive-compulsive disorder (8, 11, 13, 17). In this study, the co-morbidity observed was slightly higher, warranting further studies in this regard.

Although this study was conducted for one year at the child and adolescent psychiatry center, but small samples have been used, and therefore the need to conduct research in larger groups and in different centers is recommended. The existence of a referral clinic may have been one reason for the increased rate of co-morbidity of obsessive-compulsive disorder and Tourette syndrome, which should be considered and should be made more specific with other studies, especially in other medical centers.

Conclusions - With this study, we can conclude that further examination of the patient with a semi-structured questionnaire is essential for studying co-morbidities. In child psychiatry, co-morbidity is more important at early ages and requires special attention (1, 2, 9). Further studies are needed to elucidate TS and its co-morbidities.

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