Comparison of clinical features among youth with tic disorders, obsessive–compulsive disorder (OCD), and both conditions

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ABSTRACT

The comorbidity of tic disorders (TD) and obsessive–compulsive disorder (OCD) has long been recognized in the clinical literature and appears to be bidirectional, affecting 20–60% of individuals with each disorder. Coffey et al. (1998) found that adults with TD+OCD had a more severe comorbidity profile than adults with OCD or TD alone. This exploratory study in children attempts to evaluate whether heightened diagnostic severity, increased comorbidity load, and lower functioning is more commonplace in youth with TD+OCD in comparison to either syndrome alone. Participants were 306 children (seeking clinical evaluation) with TD, OCD, or TD+OCD. Assessment consisted of a diagnostic battery (including structured diagnostic interviews and standardized parent-report inventories) to evaluate diagnostic severity, comorbid psychopathology, behavioral and emotional correlates, and general psychosocial functioning. Data from this study sample were not supportive of the premise that youth with both a tic disorder and OCD present with elevated diagnostic severity, higher risk-for or intensity-of comorbidity, increased likelihood of externalizing/internalizing symptomatology, or lower broad-based adaptive functioning. The OCD group had elevated rates of comorbid anxiety disorders and attention-deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) were more prevalent among youth in the TD group. The three groups also differed on key demographic variables. Our findings suggest that, in contrast to adults, TD+OCD in children and adolescents does not represent a more severe condition than either disorder alone on the basis of diagnostic comorbidity, symptom severity, or functional impairment.

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1. Introduction

The comorbidity of tic disorders (TD) such as Tourette's disorder and chronic motor TD with obsessive–compulsive disorder (OCD) has long been recognized in the clinical literature. The association appears to be bidirectional, with 20–60% of TD patients meeting criteria for OCD, and 20–38% of children with OCD reporting comorbid tics (Svedo et al., 1989; Riddle et al., 1990; Hanna, 1995; Coffey et al., 2000; Eichstedt and Arnold, 2001; Ivarsson et al., 2008). Clinical correlates shared by OCD and TD include juvenile onset, a chronic fluctuating course, and familial occurrence (Coffey et al., 1998). Clinical presentations share characteristics including repetitive behaviors, intrusive thoughts and sensations, and deficits in behavioral inhibition. Moreover, both conditions are associated with neuroanatomical dysfunction in overlapping neurocortical systems including the basal ganglia, thalamus, and frontal lobes (Baxter et al., 1990; Coffey et al., 1998; Sheppard et al., 1999; de Mathis et al., 2008).

The high rate of comorbidity between TD and OCD have often made it difficult to clearly understand the unique and shared clinical features that exist between these related conditions.

Family studies have suggested that TD and OCD represent variable expression of the same underlying risk factors. In general, research has supported a stronger familial component in child-onset cases of OCD in comparison with adult-onset cases; elevated rates of both OCD and TD are found among the first-degree relatives of child-onset OCD probands (Riddle et al., 1990; Leonard et al., 1992). Additionally, research suggests that younger onset of OCD symptoms are associated with higher familial loading for OCD and TD symptoms in first-degree relatives (Grados et al., 2001). Such evidence has led to suggestions that OCD is a heterogeneous condition, with a subset of cases being familial, early-onset, and likely related to TD, others being familial but unrelated to tics, and yet another subgroup appearing to have no family history of either tics or OCD (Pauls et al., 1995). Furthermore, the clinical features observed in cases of TD+OCD may differ from those noted in patients with primary OCD without tics, with the comorbid condition representing a much more clinically heterogeneous subgroup (Como, 1995; Miguel et al., 1997; Zohar et al., 1997).

Some adult studies have supported a clinical distinction among the three diagnostic groups, OCD, TD, and TD+OCD. OCD, when...
accompanied by a tic disorder, has been associated with higher rates of comorbid mood, anxiety, disruptive behavior, and substance use disorders than OCD or TD in the absence of the other (Comings, 1994; Coffey et al., 1998; King and Schall, 1999; Cath et al., 2001). Such studies have suggested that TD+OCD is a more severe phenotype than TD or OCD alone, and is often accompanied by multiple comorbidities (Coffey et al., 1998).

Unfortunately, similar studies comparing the psychiatric correlates of these three diagnostic groups (TD+OCD, TD, and OCD) in children and adolescents are less conclusive and more scant. Existing studies have primarily focused on comparing TD+OCD to either OCD or TD (e.g., Hanna et al., 2002; Ivarsson et al., 2008; Storch et al., 2008), and not both. Although extant studies comparing OCD and TD+OCD suggest no differences in the severity of either obsessions or compulsions between the two groups (Hanna et al., 2002; Storch et al., 2008), the types of obsessions and compulsions discriminating the two groups is inconsistent across previous studies (e.g., Zohar et al., 1997; Hanna et al., 2002; Storch et al., 2008). Generally, pediatric findings indicate that both disorders are not only highly comorbid with each other, but with a variety of other psychiatric conditions (Peterson et al., 2001; Lewin et al., 2005; Roessner et al., 2007; Grados and Mathews, 2008; Ivarsson et al., 2008).

Research has shown that 85% of youngsters with OCD also meet diagnostic criteria for additional Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) disorders including other anxiety disorders, depressive and behavioral disorders, and up to 50% experience multiple comorbid conditions (Geller, 2006; Storch et al., 2008; Lewin and Piacentini, 2009). In fact, a recent study of 113 outpatients with primary OCD, conducted by Ivarsson et al. (2008), found that only one out of every five children with OCD presented in the absence of a comorbid diagnosis. Similarly, TD rarely exists in isolation, and has been related to a variety of problems including aggressiveness, impulsivity, mood, attentional problems, and anxiety disorders, and poor social skills (King and Schall, 1999; Gaze et al., 2006).

More evidence, however, needs to be brought forth to substantiate the relevant diagnostic and clinical distinctions between OCD, TD, and TD+OCD in children. In the extant (a) adult research (e.g., Coffey et al., 1998) and (b) child research (comparing TD+OCD to either OCD or TD; e.g., Hanna et al., 2002; Ivarsson et al., 2008; Storch et al., 2008), diagnostic severity, comorbidity, and global functioning provide preliminary markers to distinguish between-group differences. Although there are many factors that may contribute to presentation and prognosis of both TD and OCD, information on diagnostic severity, patterns and strength of comorbidity, and patterns of emotional/behavioral correlates may help elucidate whether combined presentation (TD+OCD) suggests an intensified symptom presentation combined with an increased risk for other common comorbidities. An improved clinical picture of combined TD+OCD in contrast to both singular presentations could help guide future intervention research targeting these youth.

1.1. Study aims and hypothesis

Consequently, the purpose of this study was to extend the findings of Coffey et al. (1998) to children by examining severity and relevant clinical correlates in youngsters with OCD, TD, and TD+OCD. Specifically, this study examined severity differences at (1) a categorical, diagnostic level, (b) based on comorbidity, (c) examining dimensional behavioral/emotional symptoms, and (d) in terms of overall functioning. Whereas Coffey et al. (1998) reported on differences in common adult comorbidities (e.g., bipolar disorder, panic disorder, substance abuse, and major depression) among these groups, we compared the three diagnostic groups on those psychiatric disorders most common in children along with relevant demographic and other psychiatric variables.

The authors hypothesized that, consistent with findings in adults by Coffey et al. (1998) and Tuke1 et al. (2002), the comorbid group would demonstrate elevated symptom severity, increased likelihood of additional comorbidities, higher incidence of clinically significant behavioral/emotional problems, and diminished overall functioning in comparison to youth with only a TD or only OCD.1

2. Methods

2.1. Participants

Participants were drawn from a consecutive series of children undergoing diagnostic evaluation at an urban university-hospital-based clinic specializing in the diagnosis and treatment of childhood anxiety, OCD, and TD. From this pool, we selected those subjects (n = 306) meeting full DSM-IV-TR (American Psychiatric Association [APA], 2000) criteria for a diagnosis of OCD (n = 233), Tourette’s disorder or chronic motortD (n = 40), or both OCD and TD (n = 33). It is noteworthy that the group sizes are unbalanced: 40 youth with TD-only, 206 youth with OCD-only, and 33 youth with TD+OCD. Among participants with a TD diagnosis, 57 subjects met DSM-IV criteria for Tourette’s disorder, and 16 for chronic motor TD. Youth with transient and vocal TD were excluded in order to obtain a more homogeneous sample. Self-identification of ethnicity was as follows for the entire sample: 77% White/Caucasian, along with 8.4% of the participants identifying as multiracial, 5.2% as Latino, 3.6% as Asian-American, 2% as Black/African-American, and 0.4% as Native American.

2.2. Procedures

At the clinical intake, the Anxiety Disorder Interview Schedule for DSM-IV: Child and Parent versions (ADIS for DSM-IV: C/P; Silverman and Albano, 1996) was administered to each child and his or her parent(s), and supplemented with the TD module from the Schedule for Affective Disorders and Schizophrenia for Children (KSADS, fifth revision: Orvaschel and Puig-Antich, 1994). The ADIS is a semi-structured interview that assesses the major anxiety, mood, and externalizing DSM-IV disorders experienced by school-age children and adolescents. The current version possesses good-to-excellent test–retest reliability for both symptom scales and diagnoses (Silverman et al., 2001). The evaluation was conducted by a postdoctoral fellow or clinical psychologist. All diagnosticians were trained by the director or medical director of the clinic (JP or JM) according to procedures recommended by the ADIS manual (Silverman, 2001). Training involved attending a presentation on the administration of the interview, observing and coding a videotaped interview, co-rating multiple live interviews conducted by a trained diagnostian, and, finally, assuming satisfactory completion of the earlier steps, conducting at least one interview using the structured interviews while under the live supervision of a trained diagnostian.

A single diagnostian administered the ADIS-C/P and Tic Module of the KSADS, generally first to the parents and then to the child. While the parents were being interviewed, the child completed the self-report measures under the supervision of a trained research assistant. Following this, the diagnostican interviewed the child while the parent(s) completed questionnaires. In most cases, one primary parent brought the child in for the intake evaluation, although both biological parents and additional adult caregivers sometimes attended and provided information for a significant proportion of youngsters. A licensed clinical child psychologist supervised or conducted each intake evaluation. Prior to the start of the clinical evaluation, parents provided informed consent and youngsters’ assent, for the use of their intake data for research purposes.

Diagnosticians reviewed symptom and interference reports from both the parent and child interviews. In the few cases where reports diverged, both respondents were re-interviewed together to clarify their impression; consensus was required for inclusion in this study. Final decisions about diagnoses were based upon the interviewer’s clinical judgment as to whether the distress or interference that children and parents reported was clinically significant and attributable specifically to the symptom profile in question. For each assigned diagnosis, interviewers assigned diagnostic severity ratings (using the ADIS Clinician Severity Rating [CSR]) on a 0 (not all) to 8 (very, very much) scale, with 4 (somewhat) being considered the threshold severity required for diagnosis (cf. Silverman et al., 1996). In summary, these modules aimed to assure that participants meet DSM-IV TR diagnostic criteria and presented with at least a moderate level of diagnostic severity. Breakdown of CSR ratings can be found in Table 1.

2.2.1. Reliability of diagnostic and severity ratings

Prior to conducting study evaluations, clinicians were evaluated for inter-rater reliability with taped and live evaluations as part of their certification process (see above). Moreover, for approximately two-thirds of cases, clinical interviewers presented the symptoms reported by the child and parent during the ADIS-IV interview, but not the assigned DSM-IV diagnoses, to a diagnostic review team led by licensed clinicians (JP, JM) experienced in the evaluation and treatment of child anxiety disorders. The review team then generated a consensus DSM-IV diagnostic profile

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1 Please note: Only OCD (or only TD) does not exclude the potential of other non-tic and non-OCD comorbidities.
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