Journal of Affective Disorders 136 (2012) 498–504

Contents lists available at SciVerse ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Cross-sectional comparison of the clinical characteristics of adults with early-onset and late-onset obsessive compulsive disorder ☆

Xuemei Wang, Donghong Cui *, Zhen Wang, Qing Fan, Haiting Xu, Jianyin Qiu, Jue Chen, Haiyin Zhang, Kaida Jiang, Zeping Xiao **

Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, 600 South Wan Ping Rd, Shanghai, 200030, China

ARTICLE INFO

Article history:
Received 16 April 2011
Received in revised form 1 November 2011
Accepted 2 November 2011
Available online 25 November 2011

Keywords:
Obsessive compulsive disorder (OCD)
Early-onset OCD
Late-onset OCD

ABSTRACT

Background: Age at onset (AAO) in obsessive compulsive disorder (OCD) may differentiate genetically and clinically heterogeneous subtypes. The current cross-sectional study compared the characteristics of early-onset OCD (onset age ≤ 18 years) and late-onset OCD (onset age > 18 years). The AAO cut-off was based on the onset distribution observed in our systematically recruited patients with OCD.

Methods: Six hundred and two (including 339 men and 263 women) outpatients meeting DSM-IV criteria of OCD were recruited from the Shanghai Mental Health Center and were screened by a battery of instruments: Yale–Brown Obsessive Compulsive Scale (YBOCS) attached Y–BOCS Symptom Checklist, Hamilton Depression Rating Scale (HAMD), Hamilton Anxiety Rating Scale (HAMA), and State-Trait Anxiety Inventory (STAI). The demographic and clinical characteristics of the 275 early-onset patients were compared to those of the 327 late-onset patients.

Results: Compared to patients with late-onset OCD, early-onset patients with OCD were significantly more likely to be male (66.9% vs. 47.4%, $X^2 = 23.1$, $p < 0.001$), to have a positive family history of mental illnesses (26.5% vs. 19.0%, $X^2 = 4.9$, $p = 0.026$), and to have a longer duration of illness [80.0 (SD = 80.7) vs. 65.5 (SD = 78.3) months, $t_{600} = 3.17$, $p = 0.002$]. Early-onset patients also had significantly higher scores on the HAMA, HAMD, STAI2, and obsessive in Y–BOCS. The sexual and symmetry/exactness obsessions and the washing/cleaning compulsions were significantly more prevalent in the early-onset group.

Conclusions: The study of a large sample from mainland China confirms the findings from previous studies and supports the hypothesis that early-onset OCD is a demographically and clinically distinct subtype of OCD.

1. Introduction

Obsessive–compulsive disorder (OCD) is a heterogeneous psychiatric disorder characterized by clinically significant recurrent, intrusive and disturbing thoughts (obsessions) as well as by repetitive stereotypic behaviors, which are usually associated with anxiety or dread (compulsions). The current one-month prevalence of OCD was 0.84% in China (Phillips et al., 2009). OCD affects up to 3% of the population and an early age of symptom onset has been observed in many patients (Kessler et al., 2005; Ruscio et al., 2010; Valleni-Basile et al., 1994).

The heterogeneous nature of the OCD phenotype has obscured the findings of clinical and treatment response studies and has complicated the search for vulnerability genes (Hemmings and Stein, 2006; Miguel et al., 2005). To help identify subtype-specific etiological factors and treatment strategies, researchers have tried to characterize OCD subtypes

☆ Disclosure/conflict of interest: All authors declare no conflict of interest.

* Corresponding author. Tel.: +86 21 34289888x3239; fax: +86 21 64387986.
** Corresponding author. Tel.: +86 21 34289888x3007; fax: +86 21 64387986.
E-mail addresses: donghong.cui@gmail.com, manyucc@126.com (D. Cui), xiaozeping@gmail.com (Z. Xiao).

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doi:10.1016/j.jad.2011.11.001

based on clinical phenomenological characteristics such as age at onset (AAO), comorbidity profile and symptom dimensions (Lochner and Stein, 2006; Mataix-Cols, 2006; Miguel et al., 2005). Researchers have reported that individuals with early-onset OCD have more severe and persistent symptoms, more gradual appearance of symptoms, worse response to SSRIs or cognitive–behavioral therapy, poorer prognosis and higher prevalence of many different types of obsessive–compulsive symptoms (do Rosario-Campos et al., 2001; Fontenelle et al., 2003; Geller et al., 1998, 2004; Grant et al., 2007; Jansch et al., 2007; Langner et al., 2009; Lomax et al., 2009; Millet et al., 2004). For gender distribution, early-onset OCD is more prevalent and has a poorer prognosis in males than in females (Albert et al., 2002; de Mathis et al., 2009; Geller et al., 1998, 2004; Jaisoorya et al., 2003; Mancebo et al., 2008). Recently, Ruscio and his colleagues explored the data from the National Comorbidity Survey Replication, a nationally representative survey of US adults. A subsample of 2073 respondents was assessed for lifetime Diagnostic and Statistical Manual of Mental Disorders, 4th ed (DSM-IV) OCD. They found that males make up the majority of very early onset cases, with nearly one quarter of males having onsets before age 10 (Ruscio et al., 2010). The risk of OCD among the relatives of early-onset subjects is between 8.8 and 10.3 (Pauls et al., 1995). A higher familial aggregation among relatives of early-onset probands has repeatedly been demonstrated, suggesting that the AAO of OCD in probands is strongly related to heritability (Garcia et al., 2009; Nestadt et al., 2000; Walitza et al., 2010; Viswanath et al., 2011). Patients with early-onset are likely to have a stronger genetic or biological component than patients with late-onset (Hemmings et al., 2004; Walitza et al., 2010). In neuroimaging studies, different patterns of brain activation (e.g., striatum and cerebellum) emerged in patients with childhood-onset OCD in comparison to those with adult-onset OCD (Busatto et al., 2001). Thus, most researches support the differentiation of early-onset and late-onset OCD as two distinct subtypes.

However, the results of comparing the clinical characteristics, etiological factors and treatment outcomes between early-onset and late-onset cases were inconsistent. For example, no association was found between AAO and familial aggregation of OCD in a large controlled family study from Germany, neither in a study by Chabane and colleagues (Chabane et al., 2005; Grabe et al., 2006). One source of inconsistency among previous studies was the different definitions used for early-onset or late-onset OCD. The cut-off age differentiating early-onset OCD and late-onset OCD varied from 8 to 25 years in most of studies. The age threshold was commonly considered to be 15 years (Hemmings et al., 2004; Millet et al., 2004), 17 years (do Rosario-Campos et al., 2001; Fontenelle et al., 2004) and 18 years (Albert et al., 2002; Jaisoorya et al., 2003; Millet et al., 2004; Sobin et al., 2000; Tükel et al., 2005), respectively; another method was using a younger age (Such as 10 years, 11 years) for early onset and a older age (such as 15 years, 17 years, 18 years,23 years) for late onset, excluding intermediate onset age patients (de Mathis et al., 2009; Delorme et al., 2005; do Rosario-Campos et al., 2001; Janowitz et al., 2009; Langner et al., 2009; Lomax et al., 2009; Maina et al., 2008). Recently, De Luca and his colleagues suggested a combination of 2 normal theoretical distributions with means (SD) of 9.66 (3.12) for the early-onset sub-group and 21.1 (8.36) years for the late-onset sub-group by mixture analysis of 196 samples (De Luca et al., 2011). Although their results are very promising, more theoretically criteria based on larger sample size are needed to define an appropriate cut-off age for early and late-onset OCD. In the current study, we identified the threshold of early-onset and late-onset OCD based on large sample size from mainland China using median age of onset as the cut-off criterion. Then we explored the phenomenological differences between early-onset and late-onset OCD by assessing the clinical characteristics of patients with OCD. The two groups were mainly compared in gender, age, family history in first-degree relative, symptom severity, course of illness, type of onset (acute vs. insidious), types of obsessive–compulsive symptoms and the presence of co-morbid anxiety and depressive symptoms.

2. Methods

2.1. Subjects

Chinese Han outpatients with a clinical diagnosis of OCD were recruited at the Shanghai Mental Health Center from 2007 to 2010. After subjects received a basic description of the study, they provided written informed consent. The institutional review board at Shanghai Mental Health Center approved the study protocol and consent processes.

Patients met lifetime DSM-IV diagnostic criteria for OCD based on a structured interview Mini-International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998). Subjects with schizophrenia, mental retardation, tic/Tourette's disorder and dementia were excluded. Since participants in the current study were also recruited for the biochemistry and genetic study, which needs more homogeneity, patients with physiological disorders were excluded by asking the history and measuring the blood sugar, blood fats and blood pressure. Patients with hypertension, diabetes, and hypercholesterolemia were excluded. Patients with hypertension, diabetes, and hypercholesterolemia were excluded. Because one aim of our following study is exploring the association between immune system and OCD, we measured the serum levels of TNF-alpha, IL-8, IL-2, IL-6, IgG, IgM, NE (data were not shown in this article).

2.2. Measures

Diagnoses were made by a trained psychiatrist using MINI, a simple, structured diagnostic interview designed to provide DSM-IV diagnoses of Axis I psychiatric disorders. The validity of the Chinese version of the MINI was 0.76–0.88 when compared with the Chinese version of the SCID-P, and the inter-rater and test–retest reliabilities of the two measures were 0.94 and 0.97–1.00, respectively (TM Si et al., 2009). Clinical verification of the diagnoses was made by a senior associate professor of psychiatrist.

Onset of OCD was established as the first month in which obsessive or compulsive symptoms persisted for at least 1 h per day and caused marked distress or interfered with the person's normal daily functioning (normal routine, occupational and social activities). Family history of OCD and other psychiatric conditions was separately assessed by two psychiatrists who conducted an open-ended inquiry about the presence of