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# Clinical and treatment comparisons between adults with early- and late-onset obsessive-compulsive disorder☆

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ABSTRACT

It is often suggested that early onset of disorders leads to higher severity and greater treatment refractoriness. Previous research has investigated whether there are clinical and demographic differences between groups of individuals who have experienced onset of obsessive-compulsive disorder (OCD) at an early or later age. Results suggest that individuals who report an early onset (EO) of the disorder report greater severity and persistence of symptoms. However, few studies have investigated whether there are differences in treatment response. The present study represents a preliminary investigation in the setting of a specialist OCD clinic. Analysis was undertaken using clinical records to investigate whether there were clinical differences and in response to cognitive-behavioural treatment (CBT) between individuals who developed OCD at an early ($n = 22$) or late ($n = 23$) age. No differences in treatment response between the groups were found. However, the EO group were rated as being more severe across a range of measures at start of treatment, and hence at end of treatment they remained more severe than the LO group. This has clinical implications, suggesting that more treatment sessions may be required for individuals who report an EO of symptoms.



## Introduction

In attempts to understand the heterogeneity of presentation of OCD, various authors have proposed that obsessive-compulsive disorder (OCD) is in fact a set of related syndromes or subgroups that can be differentiated according to different factors, including neurobiological underpinnings (Saxena et al., 1999) response to drug treatment (Jenike et al., 1997), familial aggregation of cases (Riddle, 1998) and age at onset of symptoms (e.g. Geller et al., 2004; Miguel, Rauch, & Jenike, 1997; Rosario-Campos et al., 2001). Studies have therefore investigated whether it is possible to stratify OCD as having distinct subtypes or whether early onset (EO) is in fact the same type of disorder that is identified in individuals with a later age of onset (LO). One approach to this investigation has been undertaken by examining whether there are phenomenological differences between individuals who develop OCD at EO or LO. By contrast, few studies have investigated whether different age of onset results in different responses to treatment, although some studies indicate that EO leads to more severe disorders and less therapeutic success (Goldstein, Wickramaratne, Horwath, & Weissman, 1997; Gollan, Raffety, Gortner, & Dobson, 2005).

There are a number of methodological issues that complicate comparisons between different ages of onset. Studies have retrospectively determined age of onset, moreover definitions of age of onset have varied. Some studies have used the definition as being the first time the presence of symptoms were noticed by the individual and/or family member (e.g. Jaisoorya, Reddy, Janardhan, & Srinath, 2003), whereas others have identified age of onset as being the first time that the symptoms caused impairment to functioning (e.g. Fontenelle, Mendlowicz, Marques, & Versiani, 2003). Sobin, Blundell, and Karayiorgou (2000) considered both the onset age of clinically significant symptoms and the age of OCD onset as specified by the DSM-IV criteria (American Psychiatric Association, 2000).

There is also disagreement between the age threshold that differentiates EO and LO. In different studies, the age threshold was considered to be before or after 15 (Millet et al., 2004), 17 (Fontenelle et al., 2003) or 18 (Sobin et al., 2000) years. In another study, the age of 10 years was selected as the threshold for EO and 17 for LO (Rosario-Campos et al., 2001). By contrast, Delorme et al. (2005) proposed a bimodal distribution concerning age of onset in OCD, indicating 11.1 years ($SD = 4.1$) for early onset and 23.5 years ($SD = 11.1$) for late onset. Furthermore, different diagnostic and assessment procedures have been used across studies, and studies have quantified improvement following treatment in varying ways.

☆ Conflicts of interest: none known.

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Notwithstanding these methodological difficulties, some clinical and demographic findings have been identified between EO and LO groups. Studies have found that the ratio of males is significantly higher in EO groups (e.g. Geller et al., 2004; Tukel et al., 2005), and that earlier onset of the disorder results in higher OCD symptom severity (e.g. Fontenelle et al., 2003; Miguel et al., 2001; Rosario-Campos et al., 2001) and persistence of symptoms (Geller et al., 2004). Differences between types of symptoms have also been reported. Sobin et al. (2000) found more somatic fears, symmetry and superstitious obsessions as well as more repeating, cleaning, counting and tapping/rubbing compulsions in EO patients. Tukel et al. (2005) found that symmetry and exactness obsessions, religious obsessions, hoarding and saving obsessions, and hoarding and collecting compulsions were significantly more frequent in the EO group. Millet et al. (2004) found that the EO group concerns were more related to superstition, magic thoughts and parasites obsessions as well as counting, hoarding, tapping/rubbing and collecting compulsions. In terms of onset of disorder and triggering factors, the authors found that EO patients more often reported a gradual appearance of symptoms while LO patients described a sudden onset of the disorder, with more triggering factors reported. Recently, Jänsch et al. (2007) reported a wider range of symptoms and a more severe presentation in the EO group than in the LO group.

Studies have investigated the relationship between OCD and other psychological disorders. Studies have found that EO patients had higher rates of comorbid tic disorders and Tourette's disorder (Miguel, Rosario-Campos, Shavitt, Hounie, & Mercadante, 2001; Millet et al., 2004; Rosario-Campos et al., 2001). Depression has been found to be more closely associated with later onset of the disorder (Millet et al., 2004). Diniz et al. (2004) found that longer illness duration was associated with depressive disorder and social phobia. Delorme et al. (2005) found that the EO group had increased frequency of Tourette's syndrome, whereas the LO group showed elevated prevalence of generalised anxiety disorder and major depressive disorder.

Neuropsychological and brain-imaging studies have also been conducted to compare EO and LO OCD individuals in terms of brain structure and function. Imaging studies have consistently observed volume reduction and/or hypermetabolism in the striatum in EO OCD patients (Gilbert et al., 2000; Kim, 2003), whereas these structural and/or functional abnormalities have not been consistently observed in the striatum of LO OCD patients (Aylward et al., 1996). In the search for an explanation for this striatal dysfunction, a link between streptococcal infections and the development of OCD and tic disorders in children has been suggested (Garvey, Giedd, & Swedo, 1998). It has been hypothesised that OCD in some individuals may be caused by an autoimmune response to streptococcal infections, with the diagnostic criteria described by Swedo et al. (1998) as PANDAS (Pediatric Autoimmune Neuropsychiatric Diseases Associated to Streptococcal Infections). However, conflicting with these findings are the results from recent neuropsychological studies. Roth, Milovan, Baribeau, and O'Connor (2005) reported that the LO OCD group obtained poorer scores on measures of executive function and auditory attention than did the EO group. Similarly, Hwang et al. (2007) compared EO and LO patients with a control group using a series of neuropsychological measures. They found that the LO OCD patients exhibited impaired performance on tests of executive function, compared to the normal control group and the EO OCD patients. By contrast, the controls and EO group did not differ on any of the neuropsychological measures.

Studies have also been carried out to investigate the relationship between age of onset and familial transmission of OCD, and these have produced mixed results. Several studies (Chabane et al., 2005; Nestadt et al., 2000; Pauls, Alsobrook, Godman, Rasmussen, & Leckman, 1995) have found that age at onset of OCD in probands was strongly related to familiality. However, Fyer, Lipsitz, Mannuzza, Aronowitz, and Chapman (2005) carried out a direct interview family study of OCD, and found evidence for moderate familial aggregation of the disorder, but did not find evidence of increased familial transmission in individuals who reported EO of the disorder.

The existence of a relationship between age of OCD onset and therapeutic response is a controversial issue, as few studies have been undertaken, and those that have been carried out describe conflicting results. Using medication, some studies have found no association between these variables (Ackerman, Greenland, & Bystritsky, 1998; Alonso et al., 2001) others reported that an earlier age of onset was associated with a worse prognosis using medication (Ackerman, Greenland, Bystritsky, Morgenstern, & Katz, 1994; Ravizza, Barzega, Bellino, Bogetto, & Maina, 1995; Rosario-Campos et al., 2001). Recently, Shavitt et al. (2006) and Uguz, Askin, Cilli, and Besiroglu (2006) investigated whether a range of clinical features were associated with treatment response to medication, and found that EO of OCD did not result in a poorer response to treatment. Fontenelle et al. (2003) also compared response to treatment using medication in EO and LO patients. These medications included selective serotonin reuptake inhibitors (SSRIs) (clomipramine, fluoxetine, fluvoxamine, sertraline, paroxetine, and citalopram), non-SSRI tricyclic antidepressants (imipramine and nortriptiline) and other medications (venlafaxine, mirtazapine and tranilcipromine). They found that EO patients required a greater number of therapeutic trials with different medications, although they also found that despite showing an apparently greater resistance to treatment, EO patients fared as well as LO patients after several trials of medication.

To date only two studies have examined the effect of age of onset on response to therapy. Millet et al. (2004) collected data on 617 individuals drawn from members of an OCD association and a speciality clinic using a questionnaire on family and personal psychiatric OCD history, phenomenological features of OCD, comorbidity and which treatments they had undertaken (e.g. behavioural therapy, medication). The individuals were classified according to retrospective assessment of OCD age at onset (early age of onset under 15 years and late onset above 15 years). Although the authors found some phenomenological differences between the groups (as described previously), they found no difference in outcome using SSRIs (these were not specified) or behavioural therapy between the groups.

Recently, Langner et al. (in press) aimed to identify those variables in which responders and non-responders with an early and a late onset differed, and to identify predictors of treatment outcome. They reviewed case records of inpatients who received treatment, which was defined as individual and group behavioural therapy with cognitive elements, including exposure and response prevention. For the EO group, factors predicting a good outcome included high motivation and high initial scores on assessment measures. Factors associated with a poor outcome were older age at presentation (which equates to a longer duration of symptoms), a longer duration of psychiatric inpatient treatment before assessment and a low score of social functioning. For the LO group, living in a stable relationship, having high motivation and completing treatment predicted a favourable therapy outcome, while a low score of psychological functioning and a longer duration of inpatient psychiatric treatment before presentation were associated with an undesirable therapy outcome. However, they found no significant difference in response to treatment, although they reported a higher probability for patients with EO to draw little or no benefit from treatment.

An issue rarely addressed in the literature is the confounding effect of longer duration of illness exhibited by the patients with