Obsessive-Compulsive Disorder in Schizophrenia: Clinical and Neurocognitive Correlates

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Abstract

Objectives: This study aims to determine the prevalence of obsessive compulsive disorder (OCD) among schizophrenic patients and the association of this condition with clinical and selected neurocognitive factors. Methods: This is a cross sectional study on one hundred schizophrenic patients who attended psychiatric clinic in National University Hospital and Kuala Lumpur Hospital over a four-months period. All patients diagnosed as schizophrenia according to DSM IV were assessed using Mini International Neuropsychiatric Interview (MINI) Version 5 for the presence of Obsessive Compulsive Disorder, Brief Psychiatric rating Scale (BPRS) for severity of psychosis and Yale Brown Obsessive Compulsive Scale (YBOCS) for severity of obsessive compulsive (OC) symptoms. Socio-demographic data were obtained by direct interview. The neurocognitive assessment were done using Mini Mental State Examination, Rey Auditory Verbal Learning Test (RAVLT) and Digit Span. Results: Fifteen percent of schizophrenic patients (15%) in this sample were found to have a diagnosis of Obsessive compulsive Disorder (OCD). The OCD and non-OCD schizophrenic patients did not differ significantly in term of age, gender, race and family history of mental illness. However they differ significantly on employment, type of treatment medication and the presence or severity of current psychosis. Schizophrenic patients with OCD also showed no significant different in selected neurocognitive functions.

Keywords: Schizophrenia, obsessive compulsive disorder, neurocognitive correlates

Introduction

There are various reports that obsessive compulsive (OC) symptoms in schizophrenia can be found in the earliest descriptions of the illness. Later studies had suggested that between 30% and 59% of schizophrenic experience clinically
significant obsessive or compulsive symptomatology,\textsuperscript{2,3} while between 8% and 23% meet full diagnostic criteria for obsessive compulsive disorder (OCD).\textsuperscript{4,5} Their presence has been associated with poorer social and occupational function, earlier onset of illness and greater use of service.\textsuperscript{5}

The relationship between OC symptoms and schizophrenia has started to receive increase interest recently possibly due to the new reports indicating that such an association is seen in a rather large number of schizophrenic patients (30 -59%) and that it represents an indicator of poor outcome.\textsuperscript{2,6-8}

The most important problem in studying the association between OC symptoms and schizophrenia is the phenomenology of the OC symptoms themselves. These symptoms may be ignored in patients who experience persistent psychotic symptoms, partly because severe obsessions and compulsions resemble symptoms of psychosis.\textsuperscript{9} For example, although intrusive, ego-dystonic thoughts are considered obsessions in non schizophrenic patients, in a psychotic person they can appear to be simply persistent delusions. Moreover, in these psychotic patients, the insight (a requirement for OC disorder) into such symptoms is frequently absent. However, if religious, sexual, aggressive, and or somatic preoccupation are rated as obsession and secondary repetitive behavior as compulsions, a significant number of patients with schizophrenia can be identified as having OC symptoms.\textsuperscript{2,6,7,10} Such patients are more likely than those without OC symptoms to have poor outcome (e.g. longer hospitalizations, worse social functioning, poorer employment history;\textsuperscript{2,11} and they seem to have an improved treatment response if serotonin reuptake blocker (clomipramine) is added to their antipsychotic regimen.\textsuperscript{12,13}

It is still uncertain whether OC symptoms in schizophrenic patients are manifestations of a persistent psychosis, or rather their presence indicates a distinct subclass of patients who share characteristics of both schizophrenia and obsessive-compulsive disorder. The recent reports that OC symptoms can extend beyond the period of acute psychotic exacerbation in schizophrenia and persist despite adequate treatment with antipsychotic drugs,\textsuperscript{2,6-8} support the possibility that OC symptoms in schizophrenic patients are separate from psychosis. The fact that OC symptoms in these patients response to antipsychotic also support above possibility.\textsuperscript{2,6-8}

In this study we sought to determine the prevalence of obsessive compulsive disorder (OCD) among schizophrenic patients and the association of this condition with clinical and neurocognitive factors.

\textbf{Methods}

This was a cross sectional study on schizophrenic patients who attended psychiatric clinic in National University Hospital and Kuala Lumpur Hospital over a four months period from August to December 2004. All patients diagnosed as schizophrenia by DSM 1V by psychiatrist or medical officer working in psychiatric unit were approached and those consented were interviewed. The patient will be excluded if they were too psychotic, unable to cooperate or unable to comprehend or write in either English or Malay language. Those patients who were included in the study were assessed using Mini International Neuropsychiatric Interview (MINI) Version.\textsuperscript{14} for the presence of Obsessive Compulsive Disorder, Brief Psychiatric rating Scale (BPRS) for severity of psychosis and Yale Brown Obsessive Compulsive Scale (YBOCS) for severity of obsessive compulsive (OC) symptoms.
Socio-demographic data were obtained by direct interview.

The neurocognitive assessment was done using the following instruments:

1. *Mini Mental State Examination*\(^{15}\) for a brief screening of cognitive impairment


3. *Digit Span* - to assess auditory verbal short-term (working) memory

All the scales used in the assessment have not been validated in Malaysian population. All the assessments were done by the second authors. Statistical Package for Social Sciences (SPSS) was used to analyse the data.

**Results**

A total of one hundred and thirty subjects were eligible and agreed to participate in this study. However, twenty-one patients withdrew from this study during the initial stage of assessment. Another nine patients were later found to be too difficult to communicate due to the language barrier. The characteristics of the 100 patients are shown in Table 1.

**Table 1. Socio-demographic data of schizophrenic Patients**

<table>
<thead>
<tr>
<th>Socio-demographic data</th>
<th>[n (%) or Mean ± SD]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (year)</strong></td>
<td>35.9 ± 10.3</td>
</tr>
<tr>
<td><strong>Age of onset (year)</strong></td>
<td>26.2 ± 8.6</td>
</tr>
<tr>
<td><strong>Duration of illness (year)</strong></td>
<td>9.7 ± 7.7</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Male 61(61%)</td>
</tr>
<tr>
<td></td>
<td>Female 39(39%)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td>Malay 65(65%)</td>
</tr>
<tr>
<td></td>
<td>Chinese 24(24%)</td>
</tr>
<tr>
<td></td>
<td>Indian 11(11%)</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td>Primary 4(4%)</td>
</tr>
<tr>
<td></td>
<td>Secondary 77(77%)</td>
</tr>
<tr>
<td></td>
<td>Tertiary 19(19%)</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td>Unemployed 62(62%)</td>
</tr>
<tr>
<td></td>
<td>Non-Professional 35(35%)</td>
</tr>
</tbody>
</table>
Thirty percent of schizophrenic patients (30%) have a history of mental illness, with 21% (21) having a family history of mental illness and 79% (79) not having a family history of mental illness. Of these, 58% (58) of the patients are currently psychotic, while 42% (42) are not. Additionally, 15% (15) of the patients have OCD, with 15% (15) currently having OCD and 85% (85) not having OCD. In terms of treatment, 41% (41) of the patients are receiving typical treatment, while 39% (39) are receiving atypical treatment.

Point prevalent of Schizophrenia with OCD

Fifteen schizophrenic patients (15%) have adequate criteria for a diagnosis of Obsessive compulsive Disorder (OCD) according to MINI in this study (Table 1).

Sociodemographic correlates

There was no significant different in term of mean age, gender and ethnic group, family history of schizophrenia between schizophrenic patients with OCD and without OCD. However schizophrenic patients with OCD were less likely to be employed as compared to schizophrenic patients who are not having OCD (Table 2).

Table 2: Characteristics of schizophrenic patient’s with and without OCD diagnosis

<table>
<thead>
<tr>
<th>Patient’s Factors</th>
<th>Currently OCD Mean(SD)/(%)</th>
<th>Currently no OCD Mean(SD)/(%)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 15</td>
<td>n=85</td>
<td></td>
</tr>
<tr>
<td><strong>Mean age</strong></td>
<td>31.47(±12.2)</td>
<td>36.73(±9.7 )</td>
<td>0.06</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Male 11 (18%)</td>
<td>50 (82%)</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td>Female 4 (10.3%)</td>
<td>35 (89.7%)</td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td>Malay 7 (10.8%)</td>
<td>58 (89.2%)</td>
<td>0.14</td>
</tr>
</tbody>
</table>
Chinese/Indian 8 (22.9%) 27 (77.1%)  
Employment Unemployed 13 (21.0%) 49 (79.0%) <0.05*  
Employed 2 (5.3%) 36 (94.7%)  
Type of treatment Typical 2 (4.9%) 39 (95.1%) <0.05*  
treatment antipsychotics  
A typical 13 (22.0%) 46 (78%)  
antipsychotics  
Psychotic Status currently 14 (24.1%) 44 (75.9) <0.05*  
psychotic  
currently 1 (2.4%) 41 (97.6%)  
not-psychotic  
Severity of Psychosis (BPRS scores) 7.67±5.91 4.45± 3.91 <0.05*  

*Significant value

The presence of psychosis is significantly associated with the OCD in schizophrenic patients (Table 2). A significant number of Schizophrenics with OCD were treated with atypical antipsychotic as compared to those without OCD (Table 2).

There is a significant difference between the severity of psychosis (based on BPRS) and the presence of OCD in schizophrenic patients (Table 2).

**Neurocognitive correlates**

The results of neuropsychological assessment show no significant different between schizophrenic patients with OCD and without OCD in most of the tests except in RAVLT test B. Schizophrenic patients with OCD did not show much improvement in learning as compared to schizophrenic patients without OCD even though individual different for each RAVLT test did not reach significant. However after interference (ie. RAVLT test B) the different was significant. This pattern is similar to amnestic disorder which indicate defect in new learning (Table 3).
Table 3. Neuropsychological Test Results of schizophrenic patient with the presence or absence of OCD

<table>
<thead>
<tr>
<th></th>
<th>Currently OCD</th>
<th>Currently no OCD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=15</td>
<td>N=85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean(s.d)</td>
<td>Mean(s.d)</td>
<td></td>
</tr>
<tr>
<td>MMSE</td>
<td>27.2 (± 3.9)</td>
<td>28.1 (± 2)</td>
<td>0.93</td>
</tr>
<tr>
<td>Digit span</td>
<td>12.3 (± 4.8)</td>
<td>14.1 (± 3.0)</td>
<td>0.11</td>
</tr>
<tr>
<td>RAVLT 1</td>
<td>4.5 (± 1.9)</td>
<td>5.2 (± 1.6)</td>
<td>0.11</td>
</tr>
<tr>
<td>RAVLT 2</td>
<td>6.1 (± 3.6)</td>
<td>6.9 (± 2.1)</td>
<td>0.40</td>
</tr>
<tr>
<td>RAVLT 3</td>
<td>7.3 (± 3.5)</td>
<td>8.4 (± 2.6)</td>
<td>0.20</td>
</tr>
<tr>
<td>RAVLT 4</td>
<td>7.9 (± 4.5)</td>
<td>9.5 (± 2.8)</td>
<td>0.29</td>
</tr>
<tr>
<td>RAVLT 5</td>
<td>8.3 (± 4.6)</td>
<td>10.5 (± 2.5)</td>
<td>0.13</td>
</tr>
<tr>
<td>B LIST</td>
<td>3.4 (± 2.0)</td>
<td>4.9 (± 1.7)</td>
<td>0.00**</td>
</tr>
<tr>
<td>RAVLT 6</td>
<td>7.4 (± 4.0)</td>
<td>8.9 (± 3.1)</td>
<td>0.1</td>
</tr>
</tbody>
</table>

RAVLT = Rey Auditory Verbal Learning Test  ** Significant value

Discussion

The prevalence of OCD in schizophrenic patient in this study is 15%. This finding coincides with few previous studies. This finding is higher than the lifetime prevalence of OCD in the general population of 2 to 3%. This indicates that schizophrenic patient is having higher possibility to develop OCD as compared to the normal population. The gender distribution in patient with OCD is not significantly different in this study as also shown in other study. Age of onset and duration of schizophrenia is not significantly different between the two groups. This result is in keeping with the result of earlier study.

In terms of employment, this study showed that schizophrenic patients with OCD less likely to be employed as compared to those without OCD. The possible explanations for this could be that schizophrenic patients with OCD have much impairment in their function because as we know the OCD symptoms are sometime time consuming and this aggravates their work impairment level that already being compromised by schizophrenic illness. The other reason for the impairment is due to the higher severity
of psychosis among schizophrenic with OCD could impair their job performance.

Presence of psychotic symptoms and severity of them are significantly different in schizophrenic patients with OCD as compared to those without OCD. The possible explanations for the high rate of psychosis among schizophrenic patients with OCD is that the patient with OCD symptoms are more resistant to antipsychotic treatment resulting in difficulty to achieve full remission of psychotic symptoms. The other possible explanation is the participants of these group are less compliance to their medication. This finding was also shown in the earlier studies. The higher proportion of schizophrenic patient who are treated with new antipsychotic developed OCD is something which is observed in schizophrenic patent probably that the serotonin pathways have a role in the pathological basis of OCD since the atypical antipsychotic have both serotonergic and dopaminergic pathways.

Regarding the neuropsychological test, the anterograde episodic memory was not significantly different between OCD and non OCD schizophrenic patient. This is in keeping with the finding in previous study. Schizophrenic patients with OCD did not show much improvement in learning as compared to schizophrenic patients without OCD even though individual different for each RAVLT test is not significant. However after interference i.e. RAVLT test B the difference was significant. This indicate a defect in new learning in schizophrenic with OCD, a pattern is similar as found in amnestic disorder.

Conclusions

This study was able to highlight an important issue that there is a possibility of high occurrence of OCD in schizophrenic patients with point prevalence around 15%. In this study Schizophrenia with OCD group showed a lower rate of employment than those without OCD. There is no significant different in the sociodemography of OCD and non OCD schizophrenic except in term of function where the schizophrenic with OCD has greater impairment than those without OCD. This is in keeping with the severity of psychosis seen in schizophrenic patient with OCD. Generally there is no significant different in the cognitive function test between OCD and non OCD schizophrenic.

There are some limitations to this study. The small sample size might affect the accuracy of the prevalence rate and factors associated with OCD in schizophrenic patients. Furthermore, the hospital base population does not represent national data on schizophrenic patients.

References


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