DEXAMETHASONE SUPPRESSION TEST AND SCHIZOPHRENIA

SYNOPSIS

As the prevalence of schizophrenia is very high compared with affective psychosis in Asian countries, dexamethasone suppression test (DST), was carried out on 61 chronic schizophrenic patients to find out whether there was a bias towards the diagnosis of schizophrenia against affective psychosis. The DST non-suppression rate was 11.5% (7 out of 61 cases), which was not high enough to indicate that schizophrenia was diagnosed instead of affective psychosis. It was not possible to differentiate the DST positive from the DST negative schizophrenic patients from clinical examination.

INTRODUCTION

Compared to the West, the psychiatric in-patient population of Singapore, which are of mainly Southern Chinese and Malay origin, comprises mostly of schizophrenia. During the year 1975, the percentage of patients admitted to Woodbridge Hospital, the only mental hospital in Singapore, were schizophrenia 62% and affective psychosis 2.5% as shown in Table I below. (1)
TABLE I
DIAGNOSTIC CATEGORIES IN WOODBRIDGE HOSPITAL, SINGAPORE

<table>
<thead>
<tr>
<th>Diagnostic Categories</th>
<th>First admissions %</th>
<th>Residual population %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia</td>
<td>61.8</td>
<td>75.2</td>
</tr>
<tr>
<td>Affective psychosis</td>
<td>2.5</td>
<td>4.2</td>
</tr>
<tr>
<td>Others</td>
<td>35.7</td>
<td>20.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*adapted from Tsol and Chen (1)

This preponderance of schizophrenia over affective illness was also reported in a Malaysian mental hospital, (2) and an East Pakistan mental hospital, (3) These percentages are closer to those reported from the New York hospital, in the US-UK project in which schizophrenia accounted for 61.5% and depressive psychoses, only 4.7% in New York, compared to 33.9% for schizophrenia and 24.1% for depressive psychosis in London. (4) The reasons for the discrepancy are partly due to difference in prevalence and partly due to difference in the method of psychiatric assessment and diagnostic criteria used. By adopting standard diagnostic and assessment methods, the discrepancy could be narrowed. (4)

The dexamethasone depression test (DST) has been reported to be a specific test for depression with a sensitivity of 43%, and a specificity of 96%. (5) The purpose of this study is to find out the prevalence of dexamethasone non-suppression in a group of patients suffering from established schizophrenia. A high DST non-suppression rate may indicate that some of the schizophrenic patients could be suffering from affective psychosis.

MATERIALS AND METHOD

The subjects consisted of 61 patients who satisfied the DSM III criteria for schizophrenia. Their mean age and duration of illness are 41.4 years and 16.0 years respectively. The patients were evaluated blindly by the first author using a psychiatric scale (6) in which the following symptoms were rated: somatic symptoms, insomnia, anxiety, depression, positive psychotic symptoms (thought disorder, delusions, hallucinations), and negative symptoms (emotional withdrawal and psychomotor retardation). The standard dexamethasone suppression test (DST) was carried out consisting of administering 1 mg of dexamethasone at 11.00 pm and taking a sample of blood at 4.00 pm the next day for plasma cortisol determination. This was performed by radioimmunoassay kit provided by Amer-sham International (Amertex Cortisol RIA Kit) which employs a specific antiserum immobilised on polymer beads. Total cortisol in the test serum competes with 125I-labelled cortisol for antibody binding sites, and the amount of the latter remaining bound after incubation is inversely proportional to the former. The cortisol estimation was carried out blindly by the second author.

RESULTS

Out of the 61 schizophrenic patients, 7 (11.5%) were positive (plasma cortisol level above 5 μg/dl). However, there was no significant difference between the DST positive and DST negative cases in relation to their psychiatric symptoms as shown in Table 2 below.

Positive DST (non-suppression) was not related to the presence of depression as shown in Table 3 below.

DISCUSSION

Dexamethasone suppression test (DST) was introduced to study Cushing’s syndrome by Liddle (1960). (7) As Cushing’s syndrome was also known to be associated with depression, DST was recommended as a biological marker for depressive illness. (5) DST carried out on schizophrenic patients was found to have a non-suppression rate of 11 to 30%. (8,9) The high non-suppression rate in schizophrenia was believed to be due to the presence of depressive affect that was not apparent enough to the clinician to be diagnosed, (10) or that these patients may be suffering from major depressive or schizo-affective disorder. (11) DST non-

TABLE 2
CORTISOL LEVEL AFTER DEXAMETHASONE AND SYMPTOMS SCORES

<table>
<thead>
<tr>
<th>Plasma Cortisol Level</th>
<th>&lt; 5 μg/dl</th>
<th>&gt; 5 μg/dl</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatic symptoms</td>
<td>0.556</td>
<td>0.857</td>
<td>NS</td>
</tr>
<tr>
<td>Insomnia</td>
<td>0.241</td>
<td>0.286</td>
<td>NS</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.167</td>
<td>0.287</td>
<td>NS</td>
</tr>
<tr>
<td>Depression</td>
<td>0.130</td>
<td>0.286</td>
<td>NS</td>
</tr>
<tr>
<td>Positive symptoms*</td>
<td>1.889</td>
<td>1.429</td>
<td>NS</td>
</tr>
<tr>
<td>Negative symptoms*</td>
<td>2.463</td>
<td>3.826</td>
<td>NS</td>
</tr>
</tbody>
</table>

* positive symptoms (though disorder, delusion, hallucination)
** negative symptoms (emotional withdrawal, psychomotor retardation)
suppression was also found to be useful in the detection of latent depression in paranoia as Ward et al (1982) (12) reported a case of acute paranoia who had abnormal DST and as a result was treated successfully with ECT. DST was also found to have a high positive rate in catatonic schizophrenia. (13, 14) Of the subtypes of schizophrenia, catatonia was most likely to be associated with affective illness, as Abrams and Taylor (1979) (15) found that of 123 bipolar affective illness, 22% exhibited clinical catatonia, and of 55 catatonic patients 39% were diagnostable as affective disorder, usually mania. Mania was reported by Arana et al (1983) (8) to have a 87% DST non-suppression rate.

The DST non-suppression rate of 11.4% (7 out of 61) in this series is consistent with the results reported for schizophrenia by Arana et al (1983). (8) The DST positive rate is not high enough to indicate a diagnostic bias towards schizophrenia in Singapore. It is probable that affective psychosis is uncommon in Asians. It is not possible in this series to differentiate the 11 DST positive patients from 54 DST negative ones by clinical examination. Either is it possible to relate DST results to the symptomatology of schizophrenia. As in the case of affective psychosis, DST may have a place as an investigative tool in sorting out schizophrenic patients for subclassification or treatment.

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REFERENCES


