

# The Presentation and Treatment Options of Neuro-psychiatric Disorders

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We described the in-patient referrals of 59 patients suffering from the psychiatric effects of neuropsychiatric states and compared the presentation and treatment modalities between those with the Acute and Chronic varieties of Organic Brain Syndrome (OBS) over a 6-month period, and their treatment 24 months later. The mean duration of detecting the symptoms was 3.52 days. The presence of a premorbid psychiatric illness had no influence on their clinical presentation. The most popular combination of treatment was that of a low-dose neuroleptic and a benzodiazepine (34.7%). The need for maintenance treatment was not significantly different in any group, even in those with a past history of a functional disorder. Our findings suggest that OBS are poorly detected. Although they present in various ways, there was no significant difference in the overall clinical picture of Acute and Chronic OBS, or the need for continued treatment in both groups.

**Key words:** Delirium, Dementia, detection, clinical presentation, treatment

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## Introduction

Diseases of the brain are frequently manifested by psychiatric symptomatology, a condition conventionally termed 'Organic Brain Syndrome' (OBS). Given the complexity of the nervous system and the vast range of pathological processes that can affect it, a broader view that there exist a number of different and distinct organic brain syndromes seems more likely. OBS is not a specific neurological diagnosis although it still remains a standard diagnostic category. One justification for the use of the term is as a kind of abbreviated phrase to refer to the full range of abnormal mental symptoms commonly associated with definable organic disease (1). OBS should be defined in psychiatric and not neurologic terms as they are purely descriptive with no aetiologic implications (2). Considering the variety of pathological processes that fall under this heading, it is not surprising that no one particular agent has proven to be of significant benefit to date (1). The aims of our study were:

(1) to measure the efficiency of medical personnel in

detecting patients suffering from the psychiatric effects of organic states,

(2) to compare the various patterns of clinical presentation between those with the Acute and Chronic varieties of OBS, and,

(3) to determine the various ways psychotropic medications were used in these conditions.

## Materials and Methods

Of a total of 196 patients referred to the C-L Psychiatry services of the Department of Psychological Medicine, University of Malaya Medical Centre (UMMC) between 1<sup>st</sup> March and 30<sup>th</sup> September, 1998, 59 patients were diagnosed to have OBS and constituted the focus of this study. Data were collected from referral records and further information was obtained from the patient's case notes. Cases had been assessed during the index admission within 3 hours of receiving the referral form. Patients who were diagnosed to have Acute or Chronic OBS were selected for this study. Their demographic data, psychiatric history, medical history, mental status examination with abnormalities in psychiatric and cognitive presentations, and treatment regimes were recorded. These data were used for specific sub-diagnoses according to the

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Diagnostic and Statistical Manual of Mental Disorders – 4<sup>th</sup> Edition (DSM-4) (3).

Determining the number of days that elapsed from the onset of symptoms to the time the C-L referral was made gave a crude assessment of the efficiency of medical personnel in detecting OBS. The case notes were examined further 2 years after the index hospitalization and patients who had defaulted follow-up were contacted for enquiries about their treatment. Being a cross-sectional follow-up study, the 3 patients whose case notes were not traceable were excluded from the sample. All data obtained was entered into a proforma and analyzed using the Statistical Package for the Social Sciences (SPSS) 7.5. Descriptive statistics were presented as mean plus or minus standard deviation (SD) and the differences between groups were assessed by the independent samples t-test for equality of means (2-tailed). Categorical data were analyzed using the Pearson's Chi-square test (2-sided) for differences between the Acute and Chronic groups or the Fisher's exact test (2-sided), where appropriate. The level of significance is  $p < 0.05$ .

## Results

### A. Demographic data

44 of the total number of patients were below the age of 65 (78.6%) and 12 were above 65 (21.4%). 37 were male (66.1%) and 19 were female (33.9%). The mean age of the elderly group was 75.5 years, and the below 65 group was 42.1 years. The SD was 18.20.

### B. Descriptive data -

#### 1) Duration of symptoms before referral

The minimum number of days elapsed from onset of symptoms to the C-L referral was 0 days and the maximum was 16 days. The mean value was 3.52 days and the SD was 3.29.

#### 2) Underlying psychiatric disorder

Listed below are 17 of the 59 patients who had premorbid psychiatric illnesses and all of them with functional diagnoses were in remission at the time of this study.

- Alzheimer's dementia - 5
- Major depression - 3
- Alcoholic dementia - 2
- Post-ictal psychosis - 1
- Alcoholic hallucinosis - 1
- Mental retardation with Bipolar affective disorder-1
- Post-concussional dementia - 1
- Brief reactive psychosis - 1

• SLE-induced psychosis - 1

• Simple deteriorative disorder - 1

#### 3) Perceptual disturbances and thought disorder

17 of the patients (30.4%) experienced visual hallucinations, 15 (26.8%) of them had auditory hallucinations and only 12 (21.4%) were deluded.

#### 4) Cognitive functions

17 patients had global disorientation to time, place and person. Furthermore, all those disorientated had disorientation to time. All patients had impairment of attention and concentration (Table 1).

5) Liaison psychiatry diagnosis. A clear organic triggering factor could be found for all patients. 49 (87.5%) of them had Acute OBS and only 7 (12.5%) had the Chronic variety. The respective coded DSM-4 diagnoses, with specific coding, were given (Table 2).

#### 6) Psychiatric treatment

Only 2 did not require psychiatric treatment and they were those with vascular dementia and morphine intoxication delirium. Of the 54 that required it, 21 of them required relatively high doses i.e. 12 with delirious states, including all 5 with alcohol withdrawals, 2 with vascular dementias, 1 with the organic psychotic disorder and 1 with the organic mood syndrome. 3 of them had a previous history of a mental illness. 32 of the 49 (65.3%) with acute syndromes required relatively low doses of medication. 27 of the 33 (81.8%) that required low doses were in a delirium (Figure 1). The category axis (y) represents the types of treatment used and the value axis (x) represents the frequency of use.

#### 7) Continuing treatment

At the end of the study period, of the 18 that could be traced, 14 were not on treatment and of the 4 who were still on treatment, 1 of them was in the Chronic group - vascular dementia - and 3 in the Acute group - cerebral hypoxic delirium, organic psychotic disorder and organic mood syndrome. 3 of them had a past history of a mental disorder and all of them were on Chlorpromazine, Thioridazine, Sulpiride or Risperidone. 3 had been on Haloperidol and 1 on Mianserin during the index admission.

### C. Difference in clinical presentation between those with the Acute and Chronic varieties

None of these analyses proved to be of any significance.

### D. Influence of previous psychiatric history on hallucinations and delusions in OBS

Again, none of these associations proved significant. Cross-tabulations reported  $p=0.919$ ,  $p=0.770$ ,  $p=0.336$  respectively for visual hallucinations,

auditory hallucinations and delusions.

### **E. The need for continued treatment in the subgroups of OBS**

This was not significant ( $p=0.405$ ) showing that those with the Chronic syndrome required no more maintenance treatment as compared with the Acute group. And in those with a previous psychiatric history, the need for maintenance treatment was no different from those without ( $p=0.275$ ). Even in the elderly patients, there was no increased need for continued treatment, as evidenced by a value of  $p=0.405$ .

## **Discussion**

Medical records provide a useful source of information and diagnoses based on medical records are acceptable as long as they are considered a substitute of diagnoses obtained from a direct interview. Telephone interviewing is also considered an acceptable alternative method and it has been reported that comparable diagnostic information is obtained through face-to-face and telephone interviews (4). We had used both modalities to a certain extent and they had their limitations, as would be discussed later.

In our study, the geriatric group made up less than a quarter of the sample, and on the whole, males predominated the sample by two-thirds. The mean duration of time elapsed from onset of symptoms in comparison with the SD proved that detection of these syndromes has been rather inefficient (3.52 days). Although almost a third of them had a previous history of a mental illness, it had no bearing on the presence of hallucinations and delusions, nor did it on the need for continued treatment. Those with the previous history did, however, require higher doses of medication as compared to the rest because of their underlying psychiatric illness. The above findings suggest that premorbid functional disorders do not affect the clinical presentation of patients during the course of an OBS. However, since all the patients with premorbid mental illnesses involved in the study were in remission, the above suggestion cannot be concluded. When there are severe perceptual disturbances in the visual modality, acute cerebral disorder is more implicated than the chronic type (5). In our study, visual hallucinations predominated the clinical picture in contrast to auditory hallucinations and delusions, but again did not vary in their occurrence between both varieties of OBS. In a study by Hirono (6), it was found that half of their patients with Alzheimer's

disease showed evidence of delusions or hallucinations. Independent factors associated with psychosis were older age, female sex, longer duration of illness and more severe cognitive impairment. Orientation to time is labile and quickly disrupted by organic causes. Orientation to place is disturbed later in the disease process. When established, disorientation to time and place are evidence of an organic state and may be the earliest signs in a dementing process. Disorientation to person occurs at a very late stage. It was found that a very high number of patients experienced disorientation to time and less than half were disorientated to place and person. This points to the early detection of these cases before their condition deteriorated and produced global disorientation. Memory disturbances associated with brain disease is referred as organic or true amnesia and manifest as impairments of registration, retention, retrieval, recall and recognition. In organic states, attention may be profoundly decreased and usually accompanied by lowering of consciousness (7). Almost all patients had impairment of recent memory and only just over a quarter of them had remote memory impairment. Attention and concentration was, as expected, impaired in all of them.

We tackled the confusion surrounding the Acute-Chronic dichotomy by carrying on the initial diagnosis given during the index admission and going by the possible reversibility of a particular condition instead of the rapidity of its development or resolution. Put simply, the primary cause of the acute impairment is usually 'outside the brain' and that of the chronic syndrome normally 'within the brain'. The distinction between these two organic conditions is most clearly derived from the history of the mode of onset of the disorder. A short history and firm knowledge of an acute onset will make a chronic reaction unlikely and onset in association with a physical illness is strongly suggestive of an acute organic reaction (5). The use of specific diagnoses is helpful as although most chronic organic disorders cannot be reversed, a small number are potentially treatable (8). Acute disturbances of cerebral function may, in time, progress to the development of irreversible structural pathology with an admixture of features specific to both. The two may co-exist when a chronic dementing process is complicated by another concomitant or superimposed disease (5). Those with delirium superimposed on dementia were designated as Acute as their symptoms in their index admission were those of a delirious nature.

The most popularly used treatment in our setting was a combination of a neuroleptic and a benzodiazepine, usually Haloperidol and Lorazepam. This combination accounted for the treatment of over a third of patients and the use of a neuroleptic alone came second, amounting to just under a third of the patients. Adams (9) showed that parenteral Haloperidol offered the first hope for treating delirium and the addition of Lorazepam quickened the onset of sedation. Delirium is a common component of dementia and may produce considerable morbidity. In addition to psychotic features, it may produce considerable agitation, which may be unresponsive to conventional medications. The main approach is to treat any underlying medical condition that could cause the delirium. It is, however, not always reversible and there is no specific treatment for persistent delirium (10). Cole, Primeau and Elie (11) found Haloperidol, Chlorpromazine and Mianserin to be useful in controlling the symptoms of delirium and high levels of premorbid functioning were related to better outcomes. The use of this selection of drugs was similarly practiced in our setting although Chlorpromazine is now less widely used and usually reserved more for its sedative-hypnotic effects. This is because we have had experiences with its propensity to lower the seizure threshold and to cause hypotension. Finally, there was no significant difference in the need for continued treatment at 2 years in the Chronic group as compared to the Acute group. Even in those with a previous psychiatric history or in those who were in the elderly age group, there appeared to be no difference.

Only 15 patients afflicted with these conditions were compliant to follow-ups. There were only another 3 of those who defaulted follow-up and whose conditions were documented in their case notes when they were subsequently admitted for other problems unrelated to that of their index admission. Thus, there were still 19 of them who could not be located and the problem was mainly with those having alcohol-related disorders and it has been found that patients with alcohol delirium have been known to be more difficult to follow-up (12). This large number of dropouts caused difficulties in assessing the treatment status after 2 years.

Although the methods by which data were obtained in this study have been validated previously (13), the questionable reliability of the data collected from the medical records forms the first limitation.

There was also little information on the treatment status of these patients in the records and as earlier mentioned, telephone calls revealed no new information. The second limitation was that assessment scales had not been incorporated. Another limitation to this study was the small sample size and confined only to the UMMC thus, we were not able to apply the results as representing a whole region. Also, the relatively small number of patients with a diagnosis that suited the criteria for the Chronic syndrome had caused difficulties in statistical analysis, as did the high rate of dropouts after 2 years. This study was intended to promote practical awareness and possibly, improve the understanding and treatment, of patients afflicted with organically-induced psychiatric conditions. Its implications for clinical practice raise several questions. We hope this report will stimulate renewed interest in this field and although the findings do not contribute to a new conceptual understanding of OBS, they do suggest directions for further research on their earlier detection and management.

Table 1: Cognitive functions

Disorientation to:	Frequency	%
Time	48	85.7
Place	25	44.6
Person	23	41.1

Impairment of:	Frequency	%
Recent memory	54	96.4
Remote memory	41	73.2
Attention and concentration	56	100.0

Figure 1: Psychiatric treatment

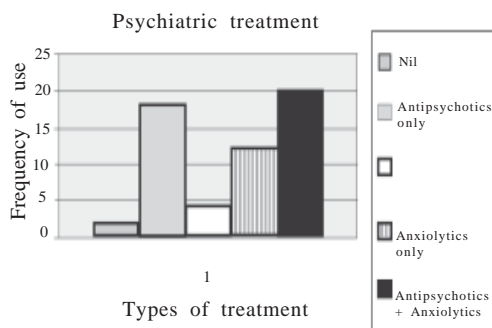


Table 2: Liaison psychiatry diagnosis

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**Acute:**

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**293.0** - There were 44 with delirium due to various causes:

- Head trauma – 6
- Uremia – 4
- Post-ictal state – 4
- Post-operative state – 2
- Brain metastasis – 2
- Hyperglycaemia – 2
- Burn trauma – 2
- Anaemia – 2 Cerebral infarction – 2 (1 with alcohol-induced persisting dementia – **291.2**)
- Hepatic encephalopathy – 1
- Septicaemia – 1
- Multiple myeloma – 1
- Cerebral lupus – 1
- Cerebral hypoxia – 1
- Hyponatremia - 1 (with co-existing thyrotoxicosis)

**291.0** - Alcohol withdrawal delirium – 6 (1 with co-existing delirium due to hypoglycaemia – **293.0**)**292.81** - Steroid-withdrawal delirium – 2**290.11** - Dementia of Alzheimer's type, early onset, with delirium due to post-operative state – 1**290.11** - Dementia of Alzheimer's type, early onset, with delirium due to non convulsive status – 1**290.3** - Dementia of Alzheimer's type, late onset, with delirium due to carcinoma 1**292.81** - Opioid intoxication delirium -1**293.81** - Psychotic disorder due to Cushing's disease, with delusions – 1**293.82** - Psychotic disorder due to end stage renal failure – 1**293.83** - Mood disorder due to acute myocardial infarction – 1**293.83** - Mood disorder due to post-operative state – 1**293.83** - Mood disorder due to cerebral lupus – 1

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**Chronic:**

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**290.40** - Uncomplicated vascular dementia – 2**290.42** - Vascular dementia with delusions – 1**290.43** - Vascular dementia with depressed mood – 1**290.20** - Dementia of Alzheimer's type, late onset, with delusions – 1**290.0** - Dementia of Alzheimer's type, late onset, uncomplicated – 1**294.0** - Alcohol-induced amnesic disorder, chronic – 1

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## Conclusion

Determining the varied presentations of Organic Brain Syndromes (OBS) may help in their earlier detection and better management.

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