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A Clinical Profile of patients with Delirium-Study of phenomenology and course in a Consultation- Liaison Psychiatry Setting

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ABSTRACT
Background: Delirium is a complex neuropsychiatric syndrome which manifests with acute disturbance of mental functions. The diagnosis is predominantly clinical, based on identification of the fluctuating cognitive symptoms. **Aim:** This study aims to identify the pattern of change in phenomenology of delirium. **Methods** An observational study was conducted in 60 inpatients from surgical and medical wards referred to the consultation –liaison psychiatric services of a tertiary care teaching institute in South India. The patients were repeatedly assessed for 7 days using the Delirium Rating Scale and the Memorial Delirium Assessment Scale. **Results:** A trend of decreasing scores on both scales was noted from Day 1 to Day 7.Delusions and hallucinations improved faster than sleep wake disturbance and mood disturbance. **Conclusion:** Delirium has a good short term outcome. Psychotic features in delirium are transient.

Keywords:delirium,phenomenology,consultation-liaison psychiatry

I. INTRODUCTION

Delirium is a complex neuropsychiatric syndrome characterized by acute disturbances of consciousness, attention, concentration and perception[1]. Delirium can be found in any medical condition and is the most common cause of acute cognitive disturbance in the hospitalized elderly. The syndrome occurs in about 10-25%of all acute admissions to a general hospital. The proportion in older patients is 20-40%.The ICU prevalence is still higher[2].

Delirium is associated with poor outcome, prolonged hospitalization and a threefold higher morbidity and mortality[3]. Several studies report that 32-67% of patients with delirium are not recognized by their treating physicians[4].The several hypothesized reasons for poor identification of delirium are as follows. First, the varied clinical presentation and the multiple etiological factors defy the classic disease model to look for a single cause of disease. Secondly delirium though expected to present with agitation, hallucinations and inappropriate behavior, it also presents with hypo activity and lethargy. Delirium is often misidentified as acute psychosis or as a primary psychiatric disorder. Finally the fluctuating course of delirium may confound the diagnosis[5].

Delirium is a common cause for referrals to the consultation liaison services[6]. Delirium constitutes 10 % of Consultation Psychiatry referrals and around 10% of delirious general hospital patients receive a psychiatry consultation. The assessment of the cognitive symptoms, and the management of the disruptive behavior symptoms and psychotic phenomena often requires the expertise of the psychiatrist. The diagnosis of delirium is largely clinical, based on the identification of the fluctuating cognitive features[7].

Studies in delirium are mainly focused on the epidemiology, etiology or the long term outcome. There is limited research on the core symptoms of delirium, the pattern of changing symptoms and short term outcome. Moreover, Indian studies on the phenomenology of delirium are lacking. This study conducted in an Indian setting intends to address these limitations.

This study was aimed to identify the pattern of change in the phenomenology of delirium in the short term.

II. MATERIALS AND METHODS

The study was conducted in a tertiary care teaching institute in Kerala, SouthIndia. Approval of the Institutional Research Committee and Ethics Committee was obtained .The study sample consisted of 60 cases of delirium meeting the study

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criteria referred from the medical and surgical wards to the Consultation Liaison Psychiatry services. Assessment was done at bedside in the respective wards. The criteria for inclusion were DSM-IV diagnosis of Delirium[8] made by the Consultant psychiatrist in male subjects aged 18 to 80 years.Informed consent for study participation was taken from the caretaker. Subjects with features of pre-existing dementia, history of Schizophrenia, active affective psychosis and poor physical condition were excluded.

The sociodemographic and clinical data were collected in a semi structured proforma. The initial assessment was performed on the day of referral which was taken as day 1.The symptoms were rated using two scales-The Delirium Rating Scale(DRS)[9] and The Memorial Delirium Assessment Scale.(MDAS)[10]

The Delirium Rating Scale comprises of 10 items-2 to determine the temporal onset of symptoms and their relationship to a physical disorder and 8 to assess the major symptoms of delirium. Each item can be scored from 0 to 4.The maximum score is 32.A cut off value of above 12 is compatible with a diagnosis of delirium[9].

The Memorial Delirium Assessment Scale integrates objective cognitive testing and behavior symptom evaluation. It yields a global score of 0 to 10[10].A cut off score of 10 and above is sensitive for delirium[11]

The patients were further assessed on days 3, 5 and 7.Considering the fluctuating nature of the symptoms a time between 5pm to 6 pm was fixed for assessment on all occasions. Individual and total scores on both scales were calculated. These scores were used to study the symptom pattern over a period of 7 days in each patient.

III. RESULTS

The sample consisted of 60 male patients diagnosed to have delirium according to DSM- IV research criteria. Their ages ranged from 23-74 years with a mean age of 50.8 years (Table 1).32 patients were referred from Surgery, 15 from Orthopedics and 13 from Internal Medicine(Table 2). The etiological distribution was as follows-34 had Alcohol withdrawal delirium, 17 had metabolic derangements, 10 had infective causes, 19 had trauma, 4 were drug related, and 19 had post-operativedelirium (Table 3). A single causative factor was identified in 20 patients (33.3%), 2 factors in28 patients (47%) and 3 factors in 12 patients (20%).

The Delirium Rating Scale (DRS) scores were 24.05 on Day 1;14.35 on Day 3,5.81 on Day 5 and 2.63 on Day 7(Table 4).

The mean MDAS scores were 19.13 on Day 1; 10.43 on Day 3; 4.95 on Day 5 and2.53 on Day 7(Table 5)

A cut off score of 12 was taken for presence of delirium using DRS(9).A DRS score less than 12 was noted in 20 patients on Day 3 ,50 patients on Day 5 and 58 patients on Day 7

Cut off MDAS score less than 10 wasnoted in 27 patients on Day 3, 52 patients on Day 5 and 58 patients on Day 7.

Table 1:Age Distribution

Age group	No. of Patients	%
<30	2	3.3
31-40	17	28.3
41-50	15	25
51-60	6	10
61-70	17	28.3
>70	3	5

Table 2: Referral pattern from other departments

Department	No. of patients	%
Surgery	32	53.3
Orthopaedics	15	25
Medicine and specialties	13	21.7

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Table 3: Etiological Distribution

Etiology	No. of patients
Alcohol withdrawal	34
Metabolic	17
Infective	10
Trauma	19
Drug	4
Post Surgery	13

Table 4: DRS scores from Day 1 to 7

Day	Mean	Median	Range
Day 1	24.05	25	12-30
Day 3	14.35	15	2-30
Day 5	5.81	4.5	0-19
Day 7	2.63	1.5	0-17

Table 5: MDAS scores from Day 1-7

Day	Mean	Median	Range
Day 1	19.1	19.5	12-30
Day 3	10.4	10	2-20
Day 5	4.95	4	0-19
Day 7	2.53	0	1-17

Table 6: Delirium Rating Scale –mean subscores

	Perceptual Disturbance	Hallucination Type	Delusions	Psychomotor behaviour	Cognitive status	Mood lability	Variability of symptoms	Sleep Wake disturbance
Day 1	2.5	2.3	2.6	1.5	2.76	1.8	2.9	2.25
Day 3	1.5	0.67	1.3	1.05	1.7	0.96	1.5	1.58
Day 5	0.35	0.16	0.03	0.5	0.95	0.6	0.63	0.78
Day 7	0.17	0	0	0.25	0.36	0.5	0.13	0.6

Table 7: Memorial Delirium Assessment Scales-mean subscores

	Level of Consciousness	Disorientation	Digit span	ShortTermMemory Impairment	Attention	Disorganised thinking	Perception
Day 1	1.8	2	2.05	2.15	2.1	1.7	1.7
Day 3	0.8	1.1	1.1	1.3	1.1	0.9	0.9
Day 5	0.4	0.5	0.6	0.6	0.6	0.4	0.3
Day 7	0.2	0.3	0.3	0.3	0.3	0.2	0.06

IV. DISCUSSION

This study investigates the evolution of symptoms of delirium over a period of 7 days.Awide age group ranging from 18 to 80 years was chosen as inclusion criteria based on the description of delirium in all age groups[12,13,14].Themean age of the sample was 50.7 years(Table 1) .Only four referred patients below 30 years met the criteria for delirium out of which two were excluded due to mood disorder.Delirium is rare in younger age,hence fewer referrals below 30 years. This finding is supported by several previous studies[14,15,16].Twenty patients were aged above 60 years whereas 40 patients were below 60

years.Two probable factors could explain this.Referral of delirium patients to psychiatry is biased towards hyperactive subtypeswhich commonly occurs in younger population[17,18].Moreover patients with preexisting cognitive decline were excluded further reducing the number of older patients included in the study. A similar age pattern of psychiatry referral was reported in a Brazilian study in 1998by Nevesetal[19].In this study 80 patients aged 13 - 78were studied. Largest number of cases was in the 31- 40 years age group followed by 51-60 years age group.

47 patients were referred from General Surgery and Orthopedics, whereas only 13 patients were referred from Internal medicine and medical specialties(Table 2)The commonest etiology identified in this study was Alcohol withdrawal. Alcohol withdrawal commonly presents with hyperactivity, hence higher chance for referral.Similar referral patterns were described in previous studies by Mittal etal, and Neves etal[19,20].

Alcohol withdrawal delirium was predominantly from Surgery and Orthopedics wards whereas metabolic and infective delirium dominated referrals from Internal Medicine (Table 3).66% of the patients had 2 or more definite identifiable cause which is in concordance with previous studies describing delirium as multifactorial [21, 22, 23].

Though patients had a wide range of scores,a decreasing trend of mean DRS scores was observed from Day 1 to Day 7(Table 4).89% decrease in mean DRS scores was noted by day 7.A metaanalysis by Turkel etal[24] supports the above findings.They reported that during an episode of delirium fewer symptoms are noted during the early subclinical phase and resolving phase compared to the fulminant phase.Our findings contrast those of Rudberg etal[25]who observed that there is no decreasing trend of DRS total scores between first and last day of delirium.This study had not excluded patients with dementia,had a higher mean age for the study and 67% patients were from medical wards with more medical comorbidities.

Among the DRS subscores(Table 6),maximum improvement was noted in the ratings for hallucinations and delusions.The least improvement was in sleep wake pattern and mood. Hallucination ratings improved by 71% on Day 3and 83% on Day 5.Delusion ratings declined by 58% on Day 3and 98% on Day 5.Both hallucination and delusion mean subscores on Day 7 was 0 indicating it was nearly absent.These findings reflect the transient nature of psychotic features in delirium.

Only 71%reduction in mood and 74% reduction in sleep wake were noted on Day 7(Table 6).Hence some degree of mood and sleep disturbance persists in spite of improvement in psychotic features.The persistence of sleep disturbance throughout the course of 7 days emphasizes the finding of Meagher etal[26], that sleep disturbance is a core feature of delirium, compared to psychotic symptoms which is only an associated feature.

MDAS scores also showed a decreasing trend with mean score of 19.13 on Day 1 and 2.5 on Day 7(Table 5).Subscores of consciousness and orientation showed better improvement compared to memory and attention(Table 7).It can be inferred that delusions and hallucinations rated by DRS, showed greater improvement compared to cognitive symptoms such as orientation, memory and attention rated by the MDAS.These findings support the concept of delirium, primarily as a disorder of cognition[26, 27].

A cut off value of 12 on DRS was taken to assess the duration of symptoms.All 60 patients had a score higher than 12 on Day 1.On Day 3, twenty patients (33%) had score <12.On Day 5, fifty patients (83%) had score <12 on Day 7.Hence delirium clears in 3 to 7 days. A study by Rookwood et al[28] proposed that delirium in hospitalized elderly has a mean duration of 7days.The improvement in both mean DRS and MDAS by 89% and 86%o Day 7 indicates overall improvement in clinical features of delirium.Hence delirium has a good short term prognosis.

Strengths of the study

This study was prospective; hence multiple assessments were made for each patient.Mostprevious studies rated the presence or absence of symptoms, while this studyobservedthe evolution of symptoms over 7 days.

Limitation

This study involved patients with delirium referred to the C-L Psychiatry services, hence cannot be generalized to a larger population with delirium.The study sample was small in size heterogeneous in etiology and age

V. CONCLUSIONS

1. The syndrome of delirium shows a pattern of improvement over 7 days
2. Psychotic features such as hallucinations and delusions improve faster than psychomotor and sleep disturbance

3. Attention and concentration disturbance are prominent throughout the course
4. Delirium has a good outcome in the short term

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Conflict of interest
None declared

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