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Phenomenology of Delirium in Elderly Patients with And Without Dementia

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Abstract

Introduction: Delirium is an acute confusional state. Phenomenological characteristics of delirium is understudied.

Aims & objective: To compare phenomenology of delirium in elderly patients with and without dementia.

Methods: Sixty elderly patients with delirium admitted consecutively in department of geriatric mental health were recruited in the study. DSM-IV-TR diagnostic criteria was used for diagnosis of delirium. Delirium Rating Scale – Revised–98 and Amended Delirium Motor Subtype Scale were applied to study phenomenology of delirium. To assess pre-existing dementia, Informant Questionnaire on Cognitive Decline-short form was applied.

Conclusions: Severity of delirium was more in patients with dementia in both cognitive and non-cognitive symptoms. No significant difference in motoric subtype of delirium was found.

Introduction

Delirium involves a wide range of cognitive disturbances (attention, orientation memory etc.) and non-cognitive neuropsychiatric symptoms (across the domains of motor behaviour, sleep–wake cycle, affective expression, perception, and thinking). This broad phenomenological range reflects generalized disruption of brain function and can mimic many other neuropsychiatric disorders. Despite the variety of causes, delirium has a consistent presentation that reflects dysfunction of a final common neural pathway(1) Even though delirium is common diagnosis among psychiatric referrals, but poorly studied in developing country like India. In previous studies sleep disturbance and inattention were most common symptoms of delirium, but sleep disturbance is not included in diagnostic criteria of delirium in DSM-IV TR. Most of previous studies regarding phenomenology are conducted in medical/surgical/ICU set up relatively few studies conducted in psychogeriatric setup. Based on psychomotor disturbances, delirium has been classified into three subtypes – Hyperactive, hypoactive and mixed. Most Widely used classification of delirium subtypes was that proposed by Lipowski.,1987 and described two type hyperactive and hypoactive on basis of movements and speech. Lipowaski also used term "*phrenitis*" for hyperactive and "*lethargicus*" for hypoactive.(2) Fourth subtype which has normal psychomotor activity has also been described. However, these subtypes are not recognized in DSM-IV and ICD-10, but mentioned in DSM-5 as a specifier of delirium. Classification of delirium into different motoric subtypes is because, according to various studies subtypes have different pathophysiology and different management strategy. For eg. Hypoactive delirium is more prone to develop bed sore while hyperactive delirium is more prone to accidental fall/fractures. Hyperactive type is easily and most frequently diagnosed. Hyperactive delirium is having better prognosis in compare to other subtypes.(3) However, above mention findings

about motoric subtype of delirium are inconsistence in studies due to lack of consensus about definitive criteria / cut-off score and validated instruments. Amended delirium motor symptom scale is recently validated in Indian culture.[4]

Aims & Objectives:

To study phenomenology of delirium in patients with and without dementia.

Methodology:

This study is a cross sectional observational study of patients with Delirium admitted in Department of Geriatric Mental Health KGMU, Lucknow. This study was approved by Ethical Committee of King George's Medical University, Lucknow. Total sixty elderly patients with diagnosis of delirium were recruited in study. Diagnosis of delirium was made by geriatric psychiatrist using DSM-IV TR diagnostic criteria. Informed consent was obtained from the care giver. Socio-demographic details were obtained by using semi-structured proforma prepared for Socio-demographic details. Similarly, Clinical proforma was used to record present and past history of medical and psychiatric illness and any treatment if patient was taking. Delirium Rating Scale – Revised–98 [6] was applied to assess severity of Delirium. Motoric subtypes of Delirium was assessed by using amended delirium motor symptom scale[7]. Presence of underlying dementia was assessed by previous treatment records and informant Questionnaire on Cognitive Decline-short form (IQCODE-sf) (Jorm, 1994). IQCODE score cut off ≥3.5 was used to define dementia.

Analysis of data:

A probability level of $P<0.05$ was considered significant. Variables were presented as mean and standard deviation for continuous variable, median with interquartile range for continuous nonparametric data and proportions/percentage for categorical variables. To compare group differences paired t-test, student t test and ANOVA were applied for continuous parametric data while nonparametric data were analysed using Mann- Whitney U test and Wilcoxon Signed Rank test. Discrete variables were analysed using Chi-square test. For strength of association between variable correlation coefficient was used.

Table 1: Sociodemographic profile of delirium in patients with and without dementia

		With Dementia (N=21)	**Without Dementia** (N=39)	**p Value**
Age (in years)		76.7 (±5.1)	74.0 (±8.6)	0.244
Sex	Male	17	22	**0.06**
	Female	4	17	
Marital Status	Married	1	2	0.9
	Unmarried	12	22	
	Widow/widower	8	15	
Education	Illiterate	6	13	0.8
	Primary	5	9	
	Middle	0	4	
	Secondary	2	3	
	Inter	4	5	
	Graduate	2	2	
	Post-graduate	2	3	
Employment Status	Unemployed	8	27	0.12
	Employed	2	5	
	Retired	11	7	

Locality	Urban	10	17	
	Rural	11	22	
P/H/O psychiatric illness other than Dementia	Present	5	13	0.44
	Absent	16	26	
Delirium	Improved	11	24	0.58
	Not improved	10	15	

Table 2: Clinical profile of delirium in patients with and without dementia

	With Dementia (N=21)	**Without Dementia** (N=39)	**p Value**
Duration of illness in Days (at time of admission)	17 (7-57)	7 (4-14)	**0.004**

On comparing sociodemographic and clinical profile of patients with and without dementia no significant difference was found in age, education, occupation and past history of psychiatric illness (other than dementia) (Table 1 and table 2). In dementia group, males were relatively more in comparison to without dementia group. (p=0.06). Duration of delirium (at the time of admission) was significantly longer in dementia group (P=0.004).

Table 3: Frequency and severity of Delirium symptoms in all patients- DRS 98 revised scale (data is in percentage)

	Present	**mild**	**Moderate**	**Severe**
Sleep-wake cycle	**100**	6.7	26.7	66.7
Perceptual disturbances	76.6	18.3	31.7	26.7
Delusions	31.7	13.3	8.3	10.0
Lability of affect	83.4	21.7	36.7	25.0
Language	91.7	25.0	40.0	26.7
Thought process	61.7	31.7	3.3	26.7
Motor agitation	88.3	20.0	35.0	33.3
Motor retardation	60	26.7	16.7	16.7
Orientation	96.7	1.7	26.7	68.3
Attention	**100**	3.3	15.0	81.7
Short-term memory	98.3	11.7	46.7	25.0
Long-term memory	75.1%	20.0	48.4	6.7
Visuospatial ability	96.7%	20.0	46.7	30
Fluctuation of symptom severity	96.7			

As illustrated in table Sleep wake cycle and Attention was affected in all cases (100%) of delirium. Delusion was least common symptom of delirium (31.7%).

Table 4: Frequency of Delirium symptoms in patients with or without dementia- DRS 98 revised scale (data is in percentage)

	With dementia	Without dementia	P value
Sleep-wake cycle	100	100	
Perceptual disturbances	71.4	79.5	0.48
Delusions	42.9	25.6	0.17
Lability of affect	81	84.6	0.71
Language	95.2	89.7	0.46
Thought process	95.2	82.1	0.18
Motor agitation	95.2	84.6	0.22
Motor retardation	52.4	64.1	0.37
Orientation	100	94.9	0.29
Attention	100	100	
Short-term memory	95.2	98.7	0.37
Long-term memory	90.5	66.7	0.07
Visuospatial ability	100	94.8	0.56
Temporal onset	100	100	
Fluctuation of symptom severity	95.2	89.7	0.57
Physical disorder	100	94.9	0.68

No significant difference was found in frequency of symptoms in both groups.

Table 5: Severity of symptoms of delirium

	All cases of delirium	With Dementia	Without Dementia	P Value
Sleep wake cycle	2.6±0.6	2.90±0.30	2.43±0.68	**0.002**
Perceptual disturbances	1.4±1.2	1.42±1.28	1.07±1.22	0.828
Delusions	0.6±1.0	.71±.95	.53±1.04	0.525
Liability of affects	1.7±1.0	1.71±1.14	1.69±.97	0.901
Language	1.8±0.9	2.09±.88	1.71±.91	0.061
Thought process	1.6±1.0	2.10±.88	1.41±.98	**0.010**
Motor agitation	1.9±1.0	2.23±.88	1.71±1.02	**0.041**
Motor retardation	1.1±1.1	.95±1.07	1.17±1.14	0.555
Orientation	2.6±0.6	2.81±.40	2.48±.79	**0.033**
Attention	2.7±0.4	2.95±.21	2.69±.56	**0.008**
Short term memory	2.1±0.7	2.33±.88	2.04±.72	0.102
Long term memory	1.2±0.8	1.71±.75	1.01±.86	**0.003**
Visuospatial ability	1.9±0.8	2.24±.84	1.72±0.78	**0.02**
Severity score	**23.5±4.8**	**26.19±3.63**	**21.74±4.71**	**0.001**
Temporal onset of symptoms	2.6±0.6	2.47±.81	2.66±.62	0.005
Fluctuation of system severity	1.1±0.6	1.09±.62	1.10±.59	0.665
Physical Disorder	1.7±0.5	1.61±0.58	1.74±0.49	.390
Total score	**29.0±4.8**	31.38±3.78	27.25±4.73	**0.003**

As illustrated in table, its representing over all severity of delirium and severity of individual symptom of delirium in all cases of delirium. Also compared severity of delirium between with and without dementia groups. In total sample of delirium, mean DRS-R98 severity score was 26.19 and the DRS-R98 total score was 31.38. Over all delirium severity was significantly more in patients with dementia group (.001). When individual symptoms of delirium were compared sleep wake cycle, thought process, agitation, orientation, attention,

long term memory and visuospatial function were more severely affected in patients with dementia group.

Table 6: Motoric subtype of delirium

Hypoactive	9 (15%)
Hyperactive	24 (40%)
Mixed	**27 (45%)**

In all cases of delirium, mixed subtype was most common subtype (45%), followed by hyperactive subtype (40%) and least common subtype was hypoactive (15%).

Table 7: Comparison motoric subtypes of delirium

		Motor Subtype			P Value
		Hyperactive	**Hypoactive**	**Mixed**	
Dementia	Present	6	3	12	0.346
	Absent	18	6	15	

When motoric subtypes of delirium were compared in patients with dementia and without dementia group no significant difference was found (p = 0.346).

Table8: Correlation of sociodemographic and clinical profile vis-a-vis severity of delirium in all patients

	DRS-98 Severity score	
	Correlation coefficient	**P Value**
Age	-0.040	0.760
Duration illness(at time of admission)	0.274	0.034

No significant association was found between age and severity of delirium.
Positive and significant but weak correlation (0.27) found between duration of illness (at the time of admission) and severity of delirium.

Discussion:

When comparing the phenomenological difference in patients with or without dementia, no significant difference in frequency of symptoms of delirium, only difference was in severity of symptoms. Overall severity of delirium was more in dementia group patients. On further analysis of individual symptom severity, in non-cognitive symptoms sleep wake cycle, thought process and agitation were more severely affected in patients with dementia. In cognitive symptoms, orientation, attention, long term memory and visuospatial functions were severely affected. In contrast to this study Meagher et al.,[8] and Trzepacz, P. T. et al.[9] and Grover et al.,[10] didn't find any difference in severity of delirium in both groups. But Lundstrom, M. et al.,[11,] Edlund A et al.,[12] and Cole MG et al.,[13] found some differences in both groups. Lundstrom M et al.,[11] found that communication difficulties and symptoms such as restlessness/agitation, aggressive behaviour, and irritability were more commonly found in the dementia group. Edlund A et al.,[12] found that delirious patients with dementia had more agitation, aggression, delusions, hallucinations and poor orientation and recognition. Cole M et al.,[13] found that patients with dementia had more psychomotor agitation, disorganized thinking and disorientation.

When comparing motoric subtype of delirium in patients with or without dementia, no difference in motoric subtypes of delirium in both groups. Similarly Grover S et al.,(40) didn't find significant difference in motoric subtypes of delirium in both groups.

In all cases of delirium, when correlating severity of delirium with sociodemographic and clinical profile, no significant correlation between age and severity of delirium were found.

Weak but significant positive correlation ($r = 0.27$) was found between duration of illness and severity of delirium.

Conclusion:

Disturbance in sleep wake cycle and attention were most frequent (100%) and most severely affected symptoms of delirium. Delusion was least common symptom of delirium. In motoric subtype of delirium, mixed was most common subtype (45%) followed by hyperactive (40%) and hypoactive was least common subtype (15%). While comparing phenomenology of delirium in patients with and without dementia, delirious patients with dementia had more medical comorbidities and longer duration of illness at the time of admission. Severity of delirium was more in patients with dementia in both cognitive and non-cognitive symptoms. No significant difference in motoric subtype of delirium was found.

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