Original article:

Comparison of outcome of etiological factors for non-traumatic coma in geriatric population in India

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Abstract:

Introduction: Assessment of a coma patient is always an emergency. These factors prompted us to study of Outcome of the patient with non- traumatic coma in geriatrics age group who will get admitted in Dr. D.Y. Patil Medical College and hospital.

Methodology: The 50 patients were drawn from general medicine wards, ICU and general out-patient department as well as the Geriatrics OPDs from Dr. D.Y. Patil hospital and research centre. Detailed history of onset of coma with symptomatology related to coma were taken. (proforma attached). All the patients studied by me were assessed clinically their severity will be graded according to Glasgow coma scale and investigated accordingly .

Results : Out of total 50 geriatric patients 37 patients succumbed to death of which 19(51.3%) patients were due to cerebrovascular accident, 17(45.9%) deaths due to metabolic causes and 1(2.7%) due to other causes. 9 patients had severe disability of which CVA patients with severe disability were 5(55.5%) , metabolic were 1(11.1%) and others were 3(33.3%). In case of good recovery number of patients were 4 of which other causes were 3(75.5%) and metabolic was 1(25%). It indicates that patients with CVA and Metabolic strokes have poor prognosis compared to patients with other causes of stroke This is statistically significant (P Value is <0.001).

Conclusion: Our study showed that mortality rate was higher with lower GCS at admission than higher GCS score on admission. Mortality was higher at GCS 3 and 4 on admission compared to GCS 5 and 6 . Recovery rate was higher in GCS 5 and 6.

Keywords : coma patient , emergency medicine

Introduction:

Assessment of a coma patient is always an emergency. Firstly, to identify and correct the cause of coma. Secondly, to identify, the pathological mechanisms causing the degree of brain failure and prevent the brain from the development of irreversible damage. [1]Thirdly to identify those patients in whom the prognosis is hopeless and for whom the institution of modern resuscitative measures will be inappropriate and serve only to increase and prolong the anguish of the relative of the patient. Coma in the elderly, as defined, is a medical emergency and treatment. In order to improve the prognosis of coma significantly in the elderly, a better understanding of the etiology and a review is necessary complementary precise, fast, and focused[2].These factors prompted us to study of Outcome of the

patient with non- traumatic coma in geriatrics age group who will get admitted in Dr. D.Y. Patil Medical College and hospital.

Methodology:

The 50 patients were drawn from general medicine wards, ICU and general out-patient department as well as the Geriatrics OPDs from Dr. D.Y. Patil hospital and research centre. Detailed history of onset of coma with symptomatology related to coma were taken. (proforma attached). All the patients studied by me were assessed clinically their severity will be graded according to Glasgow coma scale and investigated accordingly .

All these cases were neurologically assessed daily and their progress noted down till the time of death in the hospital or discharge.

Inclusion criteria:

- Patients presenting with coma for more than 6 hours,
- Patients above age group of 60 years.

Exclusion criteria:

- Patient below age group of 60 years ,
- Any history of trauma

Apart from basic pathological and biochemical investigation the patients were subjected to specialized investigation like liver function tests, blood urea, serum creatinine, serum electrolytes, CT scan and MRI of brain, CSF analysis, EEG and other relevant investigation as and when requested to establish the diagnosis.

Statistical analysis:

Analysis was done SPSS (Statistical package for social science) software version II using chi-square , t test , Z value .A p-value less than 0.05 is considered as significant.

Study was started only after the permission of Institute of Ethical Committee and confidentiality was strictly maintained in the study regarding the identity of the patients and the concerned data.

Results:

Table 1: Association between age and outcome in study group

Age (Yrs)	Outcome			Total
	Good recovery	Severe disability	Death	
<75	4	6	32	42
?.75	0	3	5	8
Total	4	9	37	50

Chi-square = 2.94, P>0.05

Table shows that off the total 50 geriatric patients in the study group , 42 patients were in age group less than 75 yrs ,off which 32 patients (76,1%) succumbed to death, 6(14.2%) patients had severe disability and 4(9.5%) patients had good recovery.

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In age group above 75years off the total 8 geriatric patients, 5 (62.5%) succumbed to death and 3(37.5%) had severe disability and zero number of patients had good recovery.

So in total 50 number of geriatric patients, death was seen in 37(74%) patients, severe disability in 9(18%) patients and good recovery was seen in 4(8%) patients.

It depicts that in case of male the total number of deaths were more compared to good recovery which was seen in only one patient but in case of females total number of deaths were 13 and number of good recovery were 3 which was better than males. Good recovery was seen much better in case of females than males it is not .significant but P>0.05.

Table 2:Association between onset of coma and outcome in study group

Onset of coma	Good recovery	Severe disability	Death	Total
Gradual	4	5	23	32
Sudden	0	4	14	18
Total	4	9	37	50

Chi-square = 2.58, P>0.05

Table 3: Association between Brain stem Reflexes and outcome in study group

Brain steam Reflexes	**Outcome**			**Chi-square**	**p Value**
	Good recovery n= 4	**Severe disability n=9**	**Death n=37**		
Corneal				2.58	>0.05
Present	4	5	23		
Absent	0	4	14		
Pupillary				2.58	>0.05
Present	4	5	23		
Absent	0	4	14		
Oculo cephalic				2.58	>0.05
Present	4	5	23		
Absent	0	4	14		
Oculo vestibular				2.58	>0.05
Present	4	5	23		
Absent	0	4	14		

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Table 4: Association between GCS on admission and outcome in study group

GCS on admission	Outcome			Total
	Good recovery	Severe disability	Death	
3	0	3	16	19
4	0	2	12	14
5	3	2	8	13
6+	1	2	1	4
Total	4	9	37	50

Chi-square = 12.36, P>0.05

Table 4 shows that mortality rate was higher with lower GCS at admission than higher GCS Deaths with GCS 3 at admission were 16(84%) compared to GCS 4 which were 12 (85.7%), GCS 5 it was 8(61.5%) and GCS 6 it was 1(25%). Mortality was higher at GCS 3 and 4 compared to GCS 5 and 6. Recovery rate was higher in GCS 5 and 6.

Table 5: Association between Etiology and outcome in study group

Etiology	Outcome			Chi-square	PValue
	Good recovery	Severe disability	Death		
	n= 4	n=9	n=37		
CVA				4.07	>0.05
Yes	0	5	19		
No	4	4	18		
Metabolic				4.04	>0.05
Yes	1	1	17		
No	3	8	20		
Others				19.08	<0.001
Yes	3	3	1		
No	1	6	36		

Table 5. shows that of the total 50 geriatric patients 37 patients succumbed to death of which 19(51.3%) patients were due to cerebrovascular accident, 17(45.9%) deaths due to metabolic causes and 1(2.7%) due to other causes. 9 patients had severe disability of which CVA patients with severe disability were 5(55.5%) , metabolic were 1(11.1%) and others were 3(33.3%). In case of good recovery number of patients were 4 of

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which other causes were 3(75.5%) and metabolic was 1(25%). It indicates that patients with CVA and Metabolic strokes have poor prognosis compared to patients with other causes of stroke This is statistically significant (P Value is <0.001).

Discussion:

In the Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments (SUPPORT), age of 70 years or older was one of five clinical independent variables associated with 2-month mortality in non-traumatic coma. About 45% of the patients were brought to hospital more than 6 h after onset of coma, and this group had statistically significantly higher mortality [3].

It depicts that in case of male the total number of deaths were more compared to good recovery which was seen in only one patient but in case of females total number of deaths were 13 and number of good recovery were 3 which was better than males. Good recovery was seen much better in case of females than males but it is not significant (P>0.05).

Association between onset of coma and outcome in study group shows that in gradual onset death were 23 (71%), severe disability was 5 (15.6%), good recovery were 4 (12.5%). Insudden onset of coma death were 14(77.7%), severe disability were 4 (22.2%), good recovery was seen in 0%. Here the chances of good recovery were higher in gradual onset of coma than sudden but the mortality rate was almost similar in both so it is not significant (P>0.05).

In a similar study done the coma was sudden onset in 58% of cases, including 28 cases (48.27%) of stroke. In 42% of the cases, it was gradual onset in 18 stroke cases and 6 cases of metabolic disorders, respectively, 42.85% and 14.28%, of all the progressive onset ofcoma [4] •

GCS on admission and outcome in study group was done to compare the outcome at presentation in hospital. Our study showed that mortality rate was higher with lower GCS at admission than higher GCS. Deaths with GCS 3 at admission were 16 (84%) compared to GCS 4 which were 12 (85.7%), GCS 5 it was 8 (61.5%) and GCS 6 it was I (25%) . Mortality was higher at GCS 3 and 4 compared to GCS 5 and 6. Recovery rate was higher in GCS 5 and 6. But it was not significant P>0.05.

Association between Brain stem Reflexes and outcome in study group shows presence of four parameters corneal , pupillary, oculo-cephalic and oculo-vestibular shows increases recovery rate and absence of these reflexes shows increase mortality rate . In our study four patients had shown good recovery in whom all the brainstem reflexes were present. But it was not significant (P>0.05). In a similar study done by bates 210 patients with anoxic ischemic injury, 52 of whom had no pupillary reflexes at 24 hours and all died By the third day 70 of these patients were left with a motor response poorer than withdrawal and all died. By the seventh day there were 26 patients who had absent spontaneous eye movements and all of those died [5].

Association between age and etiology in our study shows that geriatric patient with age group less than 75years were 42 of which 20(47.6%) had CVA as etiology, metabolic cause was present in 17(40.4%) patients and others causes were present in 5(11.9%) patients. In geriatric age

group above 75years 4(50%) patients had CVA as etiology , metabolic was present *in* 2 (25%) and 2 (25%) had other causes as etiology. It indicates that maximum etiology of coma in patients studied were below 75years of age group than that of above 75years of age .But it was not significant P>0.05.

Mortality rate compared to different etiologies in our study group showed that of the total number of patients in CVA i.e 24 of which maximum number of death were seen in cerebrovascular accident were 19 (79%) , of which ischemic stroke had the maximum number mortality 13 (86.6%) out of 15 patients, haemorrhagic stroke there was 5(71%) mortality out of 7 Total number of patients in metabolic 19 of which mortality was seen in 16(84%) patients of which mortality rate was higher in uremic (100%), hepatic(IOO%), and hypoxic(80%) coma In others causes of the total 7 patients mortality was seen in 1 patient. It indicates that mortality rates were much higher in CVA and metabolic causes than other causes of stroke. Significance was not present .In a similar study of 596 patients studied , the primary cause of coma was cardiac arrest in 31% and cerebral infarction or intracerebral hemorrhage in 36% [6] •

Conclusion:

Our study showed that mortality rate was higher with lower GCS at admission than higher GCS score on admission. Mortality was higher at GCS 3 and 4 on admission compared to GCS 5 and 6 . Recovery rate was higher in GCS 5 and 6.

There was no statistical difference in outcome in patients less than 75years and more than 75years. This could be because the number of patients in study group were less.

Patients with CVA and metabolic causes had poor prognosis compared to other causes. Ischemic amongst the cerebrovascular accident and uremic amongst metabolic causes carried the poorest prognosis. In other causes good recovery was seen in 50% of cases.

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