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STROKE PATIENTS;
ASSESSMENT OF COGNITIVE IMPAIRMENT

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ABSTRACT… Objective: To assess the cognitive impairment in stroke patients. **Study Design:** Observational study. **Setting:** Department of Medicine, Liaquat University of Medical & Health Sciences Hospital Jamshoro and Hyderabad. **Period**: 01stAugust 2013 to 1stFeburary 2014. **Methods:** One hundredpatients with the established diagnosis of cerebrovascular accident (CVA)or stroke were recruited by purposive sampling technique after obtaining a well informed consent. Socio-demographic data on a semi-structured proforma were recorded. Mini-Mental State Examination test was used to assess the cognitive impairment. **Results:** Cognitive impairment was found in all the patients with stroke. Moderate cognitive impairment was found in 57%, mild cognitive impairment in 29% and severe cognitive impairment in 14% of stroke patients. **Conclusion:** Cognitive impairment was present in almost all the stroke patients and we noticed that moderate cognitive impairment was very common.

Key words: CVA, congnitive impairment, Minimental examination, stroke.

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INTRODUCTION

Among the Non-communicable health issues, “cerebrovascular accident” also known as “Stroke” is not far behind throughout the world. In the era of 21st century, Stroke emerges and takes place in the list of common causes of death as well as illness[1]. It is prognosticate that up to 2020, morbidity and mortality due to stroke will be in the inclination[1].The epidemiological graph of stroke is declining in developed world while rising among the developing world. In developing countries, Stroke is the most frequent and most trite cause of unwholesomeness cosmopolitan. More than “75%” of stroke cases and its related deaths are reported in developing countries[2,3].

Stroke is not only a major factor responsible for mortality or morbidity but it is also a distressing factor for disability[4]. The term stroke related disability is not only confined to physical health but it also covers the major aspect of mental health as well, that is cognition. Most patients of stroke have cognitive impairment of varying degree. “Cognition is a broad term including the attention, planning and performance, visuospatial ability, memory, language and decision making”[5]. Cognition had a very strong relationship with the rehabilitation of patients with stroke. Patients with good cognition have rapid improvement and good quality life[6]. On the other hand, patients with cognitive impairment have poor improvement[6]. More simply, they become a burden on the guardian and relatives and even on themselves[7,8]. The prognosis of “Stroke induced Cognitive impairment” is very poor, only “30%” patients have upgraded to normal with time of months or even years while residuum becomes continuing blemish[9].

Many studies have focused and addressed the mental health issues related to stroke but there are only few studies which emphasized on “stroke induced cognitive impairment”. Different studies have used diverse batteries to judge the cognition. For this study, Mini-Mental state examination (M-MSE) battery had choosed. The founders of M-MSE are, “Folstein and MicHug”. They had introduced this simple, less time consuming and

efficient test in "1975". The M-MSE had covered all the criteria of cognition. The interpretation of results regarding cognition through M-MSE had done by scores. The low score is suggestive of poor cognition[5,10].

As compared to physical health, cognitive impairment does not receive treatment most of the time in most of the countries[11]. The purpose of this study is to attract the attention and divert the concentration not only of physicians but the whole health community towards this neglected issue impacting the excellence of life and recovery from stroke.

METHODS

This was an observational study conducted at "Department of Medicine, Liaquat University of Medical and Health Sciences Hospital", a tertiary care Hospital located at" Jamshoro" and "Hyderabad". The duration of study is from "1st August 2013 to 1st February 2014". Department of Medicine consists of four medical units and sample collected from each medical unit on their respective admission and emergency day by "Descriptive purposive sampling technique". With a "confidence interval of 95%",a total of hundred patients selected based on the formula of fixed proportions calculated from Raosoft Software. This study had included the patients with stroke in outdoor and indoor facilities of medical units on the basis of inclusion and exclusion criteria, where they were assessed by "Mini-Mental State Examination" test by health professionals for "assessment of cognitive impairment". The socio-demographic data was gathered through semi-structured proforma designed for the study.

Inclusion Criteria for the Study

All the new cases presenting with Stroke to Medical units of LUMHS Hospital jamshoro and Hyderabad, confirmed on the basis of CT-Scan Brain.

Exclusion Criteria for the Study

- Patients of Stroke with Coma.
- Patients of Stroke with history of head trauma.
- Patients of Stroke with Age related Dementia.
- Patients of stroke having the history of Alcohol.
- Patients of Stroke taking Psychiatric Medicines such as Anxiolytics, Anti-depressants and Anti-psychotics.

DATA ANALYSIS

"Statistical Package for Social Sciences (SPSS) version 16" was used for data analysis. Numerical variable was interpreted as "mean ± standard deviation" and categorical variable of interest was interpreted into "frequencies or percentages". Baseline characteristics such as "Age", "Gender", "Type of Stroke" and "Duration of Stroke" was classified according to "Mini-Mental State Examination" Score and shown in Table form. Pie-Chart was used to demonstrate the frequency or percentage of degree of cognitive impairment.

RESULTS

One hundred patients were included in the study. Mean ± S.D of Age of patients was 57 ± 9.4 years ranging between 30 and 80 years, from which 59% were Male and 41% Female, 72% were of Ischemic Stroke and 28% of Hemorrhagic Stroke, 71% patients were suffering for less than 6months while 29% for more than 6 months. All these baseline characteristics are classified in Mild, Moderate and Severe Cognitive Impairment according to score of "Standard Mini-Mental Examination" as shown in Table-I.

"Cognitive Impairment" was found in all the patients of varying degree. "Moderate Cognitive Impairment" was found in 57%, "Mild Cognitive Impairment" in 29% while "Severe Cognitive Impairment" was in only 14% as shown in Figure 1.

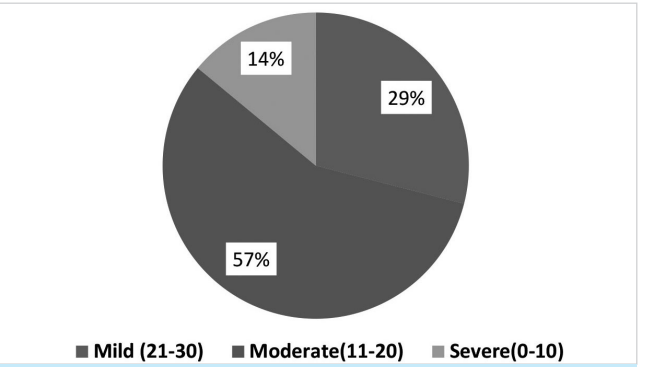

Fig-1. Showing frequency of cognitive impairment in post stroke survivors

	Standard Mini-Mental State Examination Score			Total Patients
	Mild(21-30)	Moderate(11-20)	Severe(0-10)	
AGE GROUP				
A. 31-40 years	2(33.3%)	4(66.6%)	0(0%)	**6**
B. 41-50 years	8(40%)	12(60%)	0(0%)	**20**
C. 51-60 years	11(29.7%)	20(54.05%)	6(16.21%)	**37**
D. 61-70 years	8(24.2%)	19(57.5%)	6(18.1%)	**33**
E. 71-80 years	0(0%)	2(50%)	2(50%)	**4**
GENDER				
Male	12(20.3%)	37(62.7%)	10(16.94%)	**59**
Female	17(41.4%)	20(48.7%)	4(9.75%)	**41**
TYPE OF STROKE				
Ischemic Stroke	23(31.94%)	39(54.16%)	10(13.8%)	**72**
Hemorrhagic Stroke	6(21.4%)	18(64.2%)	4(14.2%)	**28**
Duration of Stroke				
Less than 6 months	16(22.5%)	43(60.56%)	12(16.9%)	**71**
More than 6 months	13(44.8%)	14(48.2%)	2(6.89%)	**29**
	29	**57**	**14**	**100**

Table-I. Classification of Cognitive impairment in association with Baseline characteristics n=100

DISCUSSION

This study was assessing the "cognitive Impairment in stroke patients" as "Cognitive impairment" effects not only the health but also the recovery and convalescence. According to "National clinical guidelines for stroke, royal college of physicians"[12], every stroke patient had some degree of "cognitive impairment". Many studies had worked on psychiatric morbidity rather than cognitive functions such as "AK joy singh et al.[13]" had explained the frequency of different psychiatric problems in stroke patients and concluded that sexual dysfunction in more common (50%). Anxiety related issues and depression were on second and third priority respectively. The less frequent is Post-traumatic stress disorders. Stroke patients mainly suffer from depression according to "Hans Peter Haring"[11]. This study had purely described the frequency of "cognitive impairment in stroke patients". Cognitive impairment can be measured by many tools but in our study we had used "standard mini mental state examination" battery, the score of which is divided into three categories: mild (21-30), moderate (11-20) and severe (0-10).

A sum of hundred patients were enrolled and assessed methodologically. The results had been revealing socio-demographic variables, type and duration of stroke and cognitive impairment associated with outcomes of stroke. Mean± S.D of Age of patients is 57±9.4 years ranging between 30 and 80 years from which 59% were Males and 41% Females, 72% were of Ischemic Stroke and 28% of Hemorrhagic Stroke, 71% patients was suffering for less than 6months while 29% for more than 6 months.

Table shows that there were37% of cases, a highest number of cases reported in the Age group C ranging from "51-60 years". In a recent research "Knoflach M et al. (2012)[14]" while assessing the "association between Age and the functional outcome among stroke survivors", had

found that maximum number of cases (88.2%) responding were less than or equal to “55 years” of Age. Hence the Age range of this research is pertaining with results of our study had found importantly associated with one variable to another.

MMSE scoring on the patients had shown a maximum number of cases that is 57% were fallen into “Moderate cognitive impairment”, “Mild cognitive impairment” in 29% while “Severe cognitive impairment” was in only 14%. Recently in 2011 a study was published by the author “Arciniegas et al”. The results of that study was differing from our study, denoting that more patients had been observed to have “Mild cognitive impairment”[9]. “Michelle N et al.[5]” had also worked on same objective and revealed that most of the patients (70%) had“ Mild cognitive impairment” .This difference may be due to use of other cognitive assessment tool that is MoCA (Monteral cognitive assessment test).

A study on “functional, psychological and cognitive outcome in Stroke survivors “ by “Khan et al.” emphasizes on Dementia in post stroke patients and reveals 42.1% had moderate to severe dementia [15] while cognition not only includes memory but also other factors .

The majority of physicians ‘Agreed’ that cognition must be assessed in the primary care while some said that it should be left to specialists. However, many were undecided when asked if assessment in primary care would lead to better outcomes.[16]Despite general agreement that primary care physicians have an important role in cognitive screening, there is less agreement that it leads to better outcomes.

The most frequently used assessment tools were “Mini–Mental Status Exam” (MMSE), were mainly rated as only ‘Good’ in terms of perceived effectiveness. Validity/accuracy was identified as the top attribute of an ideal screening tool. There is a need of a better battery in the primary care venue.[16] and there is need of larger study to elaborate the cognitive impairment in stroke patients as this was an unattended and negligible issue but impacting the recovery from stroke.

CONCLUSION

Our Study concluded that Age range was 51-65 years (Group C) was more frequent range for the Stroke and males are more prone to stroke according to study results. The most common type of Stroke observed was Ischemic Stroke. “Mini-Mental State Examination” findings revealed that there were “57%” cases to have“ Moderate cognitive impairment”. Since Stroke is the area that had been extensively researched by the concerned medical faculty, but a very strongly associated psychiatric assessment of the patients had not met up to the mark. It is therefore medical health professionals should assess post Stroke patients on certain psychiatric protocols. To achieve this it is highly a demanding especially in Pakistan that a protocol must be designed with interdisciplinary departments in order to improve the medical care.

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