COMPLICATIONS IN PATIENTS ADMITTED WITH CARDIO-VASCULAR ACCIDENT/ STROKE IN LADY READING HOSPITAL PESHAWAR

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ABSTRACT

Background: Complications are a common and serious threat to patients with acute cardio vascular accident/ stroke. The aim of this study was to assess various complications of stroke patients of Lady Reading Hospital Peshawar.

Method: Six months cross-sectional study of 157 cases of stroke was conducted in the Intensive Care Unit (ICU) and Medical Departments of Lady Reading Hospital, Peshawar, Pakistan, from October 2012 to April 2013. All the stroke patients who had recent stroke and were referred to LRH were included in the study and relevant data regarding complications was collected from the patient's record by means of a structured questionnaire.

Results: Results of 157 patients were analyzed as: most of the patients were males n=120 (76.43%) and male to female ratio was 3.2:1. In n=114 (72.61%) cases of stroke patients were having age above 40 years. In n= 86 (54.78%) had positive history of diabetes mellitus; in n=129 (82.17%) had catheterization, in n=97(61.78%) had prophylactic use of antibiotic while in approximately n=87 (55.41%) had poor Glasgow Comma Scale during admission. Out of all stroke patients, the following complications were noticed; aspiration pneumonia (27.39%), septicemia (12.10%), dysphagia (58.60%), urinary tract infection (24.20%), upper GI bleeding (5.73%), neurological disorders (32.48%), musculo-skeleton pain (22.29%), CVS complications (8.92%), constipation (12.10%), and mortality (31.21%).

Conclusions: Our study concludes that most of the stroke patients had one or more of the stroke associated complications and thus prophylactic use of antibiotics and treating patients in a well highly equipped Intensive Care Unit is recommended to avoid complications and mortality.

Key words: Stroke, Complications, Pneumonia, Mortality, Diabetes, Septicemia, Neurological.

INTRODUCTION

Stroke is actually the loss of brain function due to a disturbance in the blood supply to the brain. This disturbance is due to either ischemia or hemorrhage[1]. Risk factors for stroke include old age, high blood pressure, previous stroke or transient ischemic attack (TIA), diabetes, high cholesterol, tobacco smoking and atrial fibrillation. High blood pressure is the most important modifiable risk factor of stroke[2].

Globally, stroke is the second leading cause of death above the age of 60 years, and the fifth leading cause of death in people aged 15 to 59 years old. Approximately 17 million people had a stroke in 2010. Between 1990 and 2010 the number of strokes decrease by approximately 10% in the developed world and increased by 10% in the developing world. Overall two thirds of strokes occurred in those over 65 years old[3].

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In developed countries, the incidence of stroke is declining, largely due to efforts to lower blood pressure and reduce smoking. High blood pressure contributes to more than 12.7 million strokes worldwide. The incidence of stroke increases exponentially from 30 years of age, and etiology varies by age. Advanced age is one of the most significant stroke risk factors. 95% of strokes occur in people age 45 and older, and two-thirds of strokes occur in those over the age of 65[4,5]. Men are 25% more likely to suffer strokes than women, yet 60% of deaths from stroke occur in women[6].

Stroke is the second leading cause of death worldwide. According to the World Health Organization, in 2010, there were 16.9 million people who had a stroke and 5.9 million people died from stroke and of these, 5 million die and another 5 million are permanently disabled[3]. In many developed countries the incidence of stroke is declining even though the actual number of strokes is increasing because of the ageing population. In the developing world, however, the incidence of stroke is increasing. Stroke is the main cause of disability[7].

A stroke is a medical emergency and can cause permanent neurological damage or death. Medical complications are common among stoke patients[8]. Patients with diabetes mellitus, poor GCS and large MCA infarcts had a higher risk of developing complications[9].

Pulmonary embolism and pneumonia are prevalent complications after acute stroke[10,11]. Patients with stroke are particularly vulnerable to urinary tract infection (UTI) due to increased risk from immune-suppression, bladder dysfunction, and increased Foley catheter use; and fever and systemic inflammatory response are associated with UTI[12]. Infection is a frequent complication after an acute stroke and the presence of early infection increased mortality. Fever is a frequent complication early after stroke and in the majority of cases it can be explained by infection or chemical aspiration pneumonia[13]. Swallowing dysfunction /dysphagia is common after acute stroke[14]. Acute and chronic swallowing problems are associated with many complications including dehydration, malnutrition, aspiration pneumonia, depression and even death[7,15,16].

Pakistan is a developing country and thus having high prevalence of communicable and non communicable diseases. Stroke is on rise in Pakistan due to the double burden of diseases phenomenon so this cross sectional study was formulated to analyze the various complications in stroke patients admitted in general Intensive Care Unit and Medical Department of lady reading hospital Peshawar Pakistan and to provide relevant information to the physicians regarding stroke management and prevention of complications in patients.

METHODOLOGY

Six months cross-sectional study of 157 stroke cases was conducted in the Intensive Care Unit (ICU) and Medical Department of Lady Reading Hospital, Peshawar, Pakistan; between October 2012 and April 2013. All the stroke patients who were admitted in Intensive Care Unit (ICU) and Medical Department were selected while stroke patients of age less than 18 years or referred from other wards were excluded from the study. Relevant secondary data were collected from the patient's and ward records, through a structured questionnaire regarding complications in stroke patients along with different numerical and categorical variables. Approval from the ethical board was taken along with confidentiality of patient's records and patients were informed that data was collected just for study purpose. Microsoft Word 2007 and SPSS 16 were used for statistical analysis. Data was presented in form of tables and graphs.

RESULTS

Our study results showed that most of stroke patients were males (n=120), while the remaining were females (n=37). Only 27.39% were below 40 years while 72.61% were above 40 years of age. The male to female ratio was approximately 3.2:1; as were shown in Table No 1.

The frequency and percentages of stroke patients with history of diabetes mellitus, catheterization, GCS and prophylactic use of antibiotics is shown in shown in Figure No 1.

Out of all 157 patients, the following complications were observed; aspiration pneumonia, septicemia, dysphagia, urinary tract infection, upper GI bleeding, neurological disorders, musculo-skeleton pain, CVS complications, constipation and mortality; as were shown in Tables No.2.

Table 1: Showing Age and Sex of stroke patients (n=157) admitted in LRH Peshawar

	Male	Female	Frequency (%)
< 40 years	31	12	43 (27.39%)
> 40 years	89	25	114 (72.61%)
Total	120 (76.43%)	37 (23.57%)	157

Table 2: Type of complications among Stroke patients (n=157) admitted in LRH Peshawar

Sr. No	Type of Complications	Frequency (%)
1	Aspiration Pneumonia	43 (27.39%)
2	Septicemia	19 (12.10%)
3	Dysphagia	92 (58.60%)
4	Urinary Tract Infection	38 (24.20%)
5	Upper GIT Bleeding	9 (5.73%)
6	Neurological Disorders	51 (32.48%)
7	Musculoskeletal Pain	35 (22.29%)
8	CVS Complications	14 (8.92%)
9	Constipation	19 (12.10%)
10	Mortality	49 (31.21%)

DISCUSSION

From the study results it was evident that prevalence of stroke was 72.61% among old age patients as were assessed in various International studies[4,5]. In our study, medical complications were common in stroke patients as were supported by previous studies[8].

Patients with diabetes mellitus, poor Glasgow Comma Scale and large Middle Cerebral Artery infarcts had a higher risk of developing complications[9]. Our study results showed significant correlation of diabetes mellitus, catheterization, prophylactic use of antibiotic and Glasgow Comma Scale as were revealed and supported in International studies[4,12]. In our study, 27.39% (n= 43) had aspiration pneumonia while in other International studies the prevalence of pneumonia was

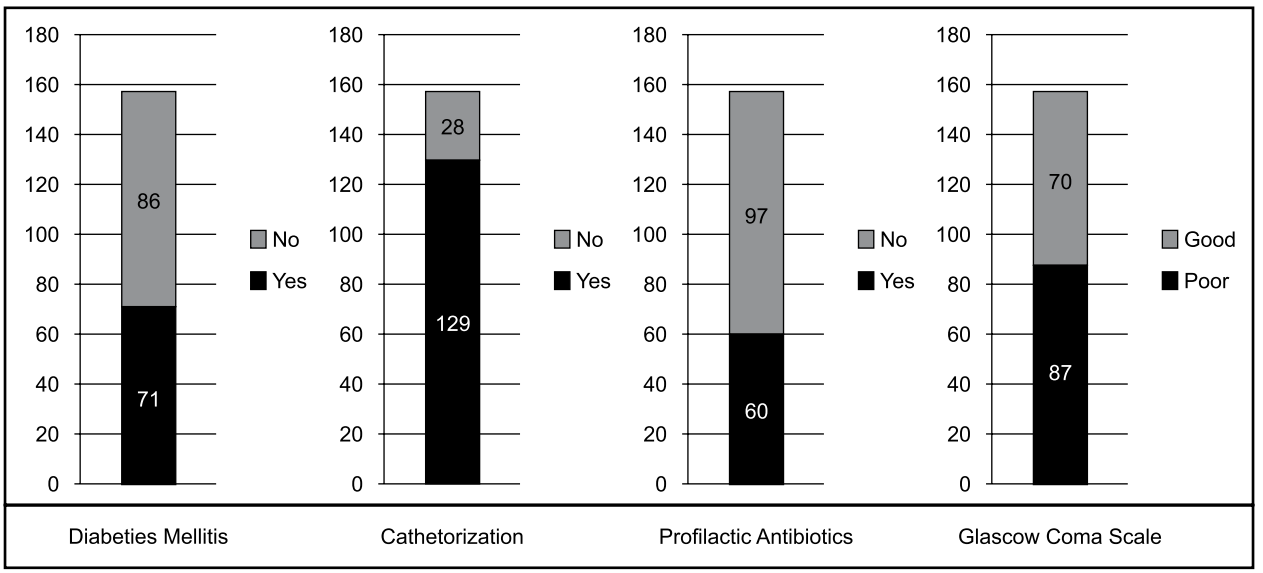

Figure 1: Graph showing frequency and percentages of stroke patients with Diabetes Mellitus, Catheterization, GCS and Prophylactic use of Antibiotics in stroke Patients (n=157), LRH Peshawar

less and ranged from 4.2% to 20%[10,11].

Patients with stroke are particularly vulnerable to UTI due to increased risk from immune-suppression, bladder dysfunction, and increased Foley catheter use; and the fever and systemic inflammatory response are associated with UTI[12]. In many International studies the prevalence of UTI in stroke patients was far less (3.7% to 17.8%) as compared to our study which showed highest prevalence i.e. 24.2%[12,17].

Dysphagia is common after clients have had a stroke, and it places them at risk for numerous complications[18]. Swallowing dysfunction (dysphagia) is common and disabling after acute stroke. Acute and chronic swallowing problems are associated with many complications including dehydration, malnutrition, aspiration, pneumonitis, depression and even death[5]. In a study published in Medical Journal of Malaysia showed 41% and 51% prevalence of dysphagia in stroke patients as were found in our study i.e. 58.60% (n=92)[16].

In many international studies, the neurological problems were reported (21.1%) and were confirmed in our study having 32.48% (n=51)[10,19]. Our study results showed 22.29% (n=35) of musculoskeletal pain in stroke patients while in a study published in Journal of Medical Association in Thailand showed 15% and another study showed 28% prevalence[17]. In our study 5.73% (n=9) of stoke patients had G.I bleeding which is higher as compared to other previous studies i.e. 3.2% to 5.2%[9,10,20].

Our study results showed 12.1% septicemia, 8.92% CVS complications and 12.10% constipation in stroke patients which were revealed in different national and international studies[9,13,21]. In our study the mortality was 31.21% in stroke patients while in other studies it varies from 24% to 29%[4,22].

CONCLUSION

Our study concludes that the prevalence complications in stroke patients admitted in LRH Hospital was high and thus early mobilization, close monitoring of identified risk factors, prophylactic antibiotics, antiseptic-impregnated catheters, and treating stroke patients in a well equipped Intensive Care Unit is needed to manage and prevent complications to reduce complications among stroke patients.

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