

**Original Article****Age, Gender and Common Site of Haematoma Formation among Acute Subdural Hematoma Patients: Experience of 48 Cases in Bangladesh**

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Abstract

Background: Acute subdural hematoma can occur in different age groups of patients in both male and female. **Objective:** The purpose of the present study was to observe the age and gender distribution among acute subdural hematoma patients. **Methodology:** This cross-sectional study was carried out in the Neurosurgery Department of Dhaka Medical College Hospital, Dhaka, Bangladesh from January 2011 to August 2012 for a period of one year and eight months. Patients with acute subdural hematoma who fulfilled the inclusion criteria for surgery and got admitted were selected as study population. Acute subdural hematoma patient of any age, both sexes with GCS 5 to 13, thickness of hematoma more than 10 mm, midline shift more than 5 mm, pupil reacting to light and patient presented within 72 hours of injury were included for this study. At admission, a detailed history of the illness was taken from the patient or attendant, thorough general and neurological examinations were carried out and were recorded. **Result:** A total number of 48 patients were recruited for this current study. The mean age of the patients was 32.39 ± 11.63 years and their age ranged from 10 to 56 years. The male and female ratio was 5:1. Out of 48 patients 17(31.25%) cases were fronto-temporal. Temporo-parietal were 16(33.3%) patients. Fronto-temporo-parietal were 7(14.5%) cases. Parietal were 5(10.41%) cases. Frontal were 3 (6.25%) case. **Conclusion:** In conclusion majority of the patients are male young adults presented with fronto-temporal and temporo-parietal region of skull. [*Journal of Science Foundation* 2019;17(2):54-57]

Keywords: Age distribution; gender difference; acute subdural hematoma

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Introduction

Young male are the major victims following motor vehicle accident (Ammar et al., 2009). One of the most serious neurosurgical emergencies usually following trauma, which often require surgical intervention is acute subdural hematoma. If proper treatment is not prompt, acute subdural hematoma can lead to other problems such as intraparenchymal hemorrhages and contusion (Chabok et al., 2011).

Acute subdural hematoma found in 2.0% of admitted patients present with head injury (Bhat et al., 2010). Acute subdural hematoma is about 30% in severe head injury and it is double of the incidence of extradural hematoma (Bullock et al., 2006). The mortality of acute subdural hematoma is about 50% to 90% and traditionally thought to be higher in aged patients (60.0%), 90 to 100% in patients on anticoagulation (Ammar et al., 2009). Acute subdural hematoma with underlying brain injury found in 2.0% usually much higher than for acute extradural hematoma; however, mortality has been found around 60.0% and can be lowered by rapid surgical intervention and aggressive medical management (Narayan et al., 2005). According to hospital record about 6000 to 8000 patients attend for emergency neurosurgical consultation and out of them 3000 to 3500 patients got admission and on an average 700 patients expire in Dhaka Medical College Hospital every year for head injury (Langlois et al., 2006).

In this country there is no exact epidemiological statistics but Report of Bangladesh Bureau of Statistics, 2011 revealed road traffic accident with head injury is one of the major causes of death below the age of 50 years in developed countries (Langlois et al., 2006). Due to rapid industrialization and urbanization, mass casualty occurring now and then and road traffic accident (RTA) is increasing terrifically day by day in Bangladesh; however, other causes of head injury are fall from height, physical assault, industrial accident, domestic and sports injuries (Das et al., 2015). The purpose of the present study was to observe the age and gender distribution among the acute subdural hematoma patients.

Methodology

This was a cross-sectional study and was carried out in the Department of Neurosurgery at Dhaka Medical College Hospital, Dhaka, Bangladesh. This study was carried out from January 2011 to August 2012 for a period of one year and eight months. Patients with acute subdural hematoma who fulfil the inclusion criteria for surgery and got admitted into the Neurosurgery Department of Dhaka Medical College Hospital, Dhaka, were selected as study population. Acute Subdural hematoma patient of any age, both sex with GCS 5 to 13, thickness of hematoma more than 10 mm, midline shift more than 5 mm, pupil reacting to light and patient presented within 72 hours of injury were included for this study. Brain damage other than lobar injury like brain stem, thalamic, hypothalamic, callosal injury, ASDH with associated polytrauma and bilateral dilated, fixed pupil, GCS-less than 5 and more than 13, penetrating head injury with ASDH were excluded from this study. A questionnaire was prepared considering variables like age, sex, presenting complaints, clinical findings which was verified by the guide and then data were collected by the researcher himself. Acute Subdural Hematoma defined as collection of blood between the inner meningeal layer of dura and the arachnoid matter presenting within 3 days. After necessary modification following pre-testing, the structured data sheet was designed and used as data collection instrument. At admission, a detailed history of the illness was taken from the patient or attendant, thorough general and neurological examinations were carried out and were recorded. The data were collected and edited manually. Then the data was entered into SPSS (Statistical Package for Social Science, version 20) computer software program. The entered data were checked and verified. The data were presented in tabulated form. Statistical calculations were performed by the same software. Prior to commencement of this study the research protocol was approved by the Ethical Review Committee and Research Review Committee of Dhaka Medical College, Dhaka. Then informed written consent was taken from each patient or guardian.

Results

A total number of 48 patients presented with acute subdural hematoma who were operated in the Department of Neurosurgery of Dhaka Medical College & Hospital, Dhaka, Bangladesh were included in current study. The mean age of the patients was 32.39 ± 11.63 years in group and their age ranged from 10 to 56 years. The age distribution showed the highest peak of incidence at the third and lowest peak at the sixth decade of life. Majority of the patients were in the age group of 21 to 30 years which was 20(41.66%) cases followed by 31

to 40 years age group, 41 to 50 years of age group and 10 to 20 years of age group which were 11(22.91%) cases, 8(16.66%) cases and 5(10.41%) cases respectively (Table 1).

Table 1: Age distribution of the study groups (n=48)

Age group	Frequency	Percent
10 to 20 Years	5	10.41
21 to 30 Years	20	41.66
31 to 40 Years	11	22.91
41 to 50 Years	8	16.66
>50 Years	4	8.33
Total	48	100.0
Mean±SD (Range)	32.3±11.63 (10 to 56)	

Among 48 patients 40(86.96%) cases were male and 8(13.04%) cases were female. The male and female ratio was 5:1 (Table 2).

Table 2: Sex distribution of the study groups (n=48)

Gender	Frequency	Percent
Male	40	83.3
Female	8	16.7
Total	48	100.0

Out of 48 patients 17(31.25%) cases were fronto-temporal. Temporo-parietal were 16(33.3%) patients. Fronto-temporo-parietal were 7(14.5%) cases. Parietal were 5(10.41%) cases. Frontal were 3 (6.25%) case (Table 3).

Table 3: Site of hematoma of the study groups (n=48)

Site of Haematoma	Frequency	Percent
Promo-temporal	17	31.25
Temporo-parietal	16	33.3
Fronto-temporo-parietal	7	14.5
Parietal	5	10.41
Frontal	3	6.25
Total	48	100.0

Discussion

Among trauma patients, head injury is responsible for up to 50% of fatalities and for a large component of continuing care among survivors (Badjatia et al., 2008). Head injury remains the most common cause of death and disability in young people. Several types of head injury are amenable to neurosurgical intervention, and improved outcomes have been reported in patients receiving prompt treatment of post-traumatic extra-axial cerebral mass lesions, including EDHs and SDHs (Tallon et al., 2008). The morbidity and mortality rates of acute subdural hematoma patients are still very high despite modern intensive care and surgical treatment. The outcome depends upon the ability to control intracranial pressure rather than removal of subdural clot. Although timing of clot removal within 4 hours of injury has lower mortality to 30.0% with functional recovery rate of 65.0% but ICP control has been a critical factor (Bullock 2006).

A total number of 48 patients presented with acute subdural hematoma who were operated in the Department of Neurosurgery of Dhaka Medical College & Hospital, Dhaka, Bangladesh were included in current study. The mean age of the patients was 32.39±11.63 years in group and their age ranged from 10 to 56 years. The age distribution showed the highest peak of incidence at the third and lowest peak at the sixth decade of life.

Majority of the patients were in the age group of 21 to 30 years which was 20(41.66%) cases followed by 31 to 40 years age group, 41 to 50 years of age group and 10 to 20 years of age group which were 11(22.91%) cases, 8(16.66%) cases and 5(10.41%) cases respectively. Many factors such as the preoperative neurological condition of the patient, advance age, extent of concomitant underlying brain injury, presence of severe extra cranial injuries, timing of surgery and postoperative increased ICP have been advocated as being responsible for the poor outcome in the management of acute subdural hematoma (De Souza et al., 2007).

Regarding this study, it has been deliberately avoided moribund patients who have GCS 3/4, bilateral dilated fixed pupils. That may be one of the causes of low mortality in our series than those of other reported series (Tallon et al., 2008). Reducing the operating time and duration of hospital stay it is possible to decrease treatment cost significantly and it seems to us it is important to consider such factors for the development of greater clinical efficiency in hospitals with current challenge of limited resources and staff constraints especially developing country like ours'. The result of this study suggests that multidural fenestration can be used for the clot evacuation in ASDH as an alternative method for the wide opening of dura mater.

Conclusion

We recommend using dural fenestrations technique but further large scale comparative clinical studies should be performed to evaluate the real value of this technique and to assess its impact on morbidity and mortality rates. However it is necessary to use techniques that can be easily performed in a shorter time without compromising the outcome.

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