

Frequency of Subdural Hematoma in Different Ages due to Motor Vehicle Mishaps on Computed Tomography Scan Brain

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ABSTRACT

Background: Motor vehicle accidents are devastating effect on population in growing countries and often affect working class.

Aim: To determine the frequency of subdural hematoma in patients of different ages due to motor vehicle mishaps on computed tomography scan brain.

Methods: In accidental unit, Lahore General Hospital, Lahore (LGH) from September 2017 to December 2017 this study was carried. One hundred seventeen cases were selected who approached to emergency due to motor vehicle accidents. The cases with traumatic skull injury and having blood collection (hematoma) were considered. Axial computed tomography scan brain without contrast was performed. The frequency of subdural hematoma in different ages was determined in percentages, tables and graphs.

Result: One hundred seventeen patients were enrolled in the study; subdural hematoma was 51(43.58%) while no subdural hematoma was 66(56.41%). Out of 51 subdural hematoma 47(92.15%) and 4(7.84%) were males & females respectively. Forty three years was mean age with 13-77±13.01 years was range. All the individuals with head injury and having subdural hematoma were categorized into different groups. The frequency percentage of subdural hematoma in different ages was 64.70% (19-45 years) followed by 31.37% (≥46years) and then 3.92% in (≤18years).

Conclusion: Subdural hematoma was more often in middle age and then old age.

Keywords: Motor vehicle accidents, subdural hematoma, computed tomography scan brain

INTRODUCTION

Motor vehicle accidents are devastating effect on population in growing countries and are considered to be a major health issue due to cranial injury that disturbs the social life activities. 81 out of 100,000 individuals affected by head trauma in Pakistan per year. Many neurological activities are disturbed by head injuries.¹ In the Europe 235 per 100,000 cases admitted to hospitals due to moderate and severe skull trauma as a result of motor vehicle accidents per year.² 40-60 percent children visits emergency due to head trauma.³ Traumatic skull injuries has damaging affect on physical, mental and emotional health of individuals that finally intensify the socioeconomic issues⁴. TBI is classified into primary and secondary lesions. Primary lesion occurs as a result of direct blow while different changes occur in brain parenchyma like herniation and swelling in secondary lesion⁵. Damage to head due to foreign hazards interfere the normal arrangement of cranium structures and blood collection occur forming hematoma at different areas of brain. Subdural hematoma is the occurrence of collected blood

between arachnoid and inner Dural meningeal layer.⁶ CT scan is the modality of choice to investigate the acute traumatic head injury cases by imaging and is very low cost, fast, non harmful and widely available procedure. Different types of hematoma are easily picked up by computed tomography scan brain.^{7, 8} The justification of this study is to recognize the subdural hematoma cases in many ages due to motor vehicle mishaps that approached to accidental unit detected by CT scan brain and to provide them treatment urgently to lower morbidity and casualties. As a result of this way we can decrease the disease burden among the natives.

METHODS

In LGH, Lahore accidental unit this study was done and study pattern was descriptive cross sectional. One hundred seventeen cases of head injury due to MVA with simple random technique were selected. The CT scan machine used was multi slice (Toshiba with Toshiba printer & Kodak Dry View 8100, Laser imager). Without contrast CT scan brain of all these patients was performed after taking demographic details, informed verbal consent and findings of CT brain were arranged in sheet. Information regarding patients was hidden. Excel software and SPSS 22 was helpful and used for collected data analysis.

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The quantitative and qualitative variables were shown in the form of charts, graphs, tables, mean and standard deviation. All male and female patients with closed head damage from motor vehicle accidents were included while all patients with bleeding disorders, hypertension and patients without head trauma were excluded.

RESULTS

One hundred seventeen patients were enrolled; subdural hematoma was 51(43.58%) while no subdural hematoma was 66(56.41%). Out of fifty one cases of subdural hematoma 47(92.15%) and 4 (7.84%) were males & females respectively. (Table I) Forty three years was mean age with 13-77±13.01 years was range. (Table II). All the individuals with head injury and having subdural hematoma were categorized into different groups. Group I, (≤18years), group II, (19-45) and group III, (≥46).The frequency and percentage of subdural hematoma in group I, less than 18 years were 2(3.92%), group II, 19 to 45 years were 33(64.70%) and group III, 46 years onward were 16(31.37%) (Table III).

Table-I: Gender frequency of subdural hematoma

Gender	Frequency	%age
Female	4	7.84
Male	47	92.15

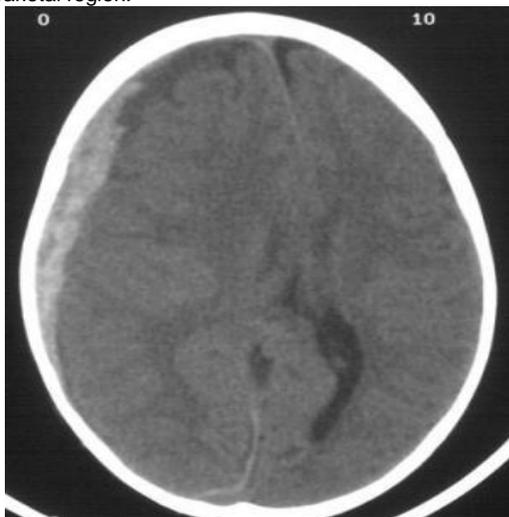
Table-II: Descriptive statistics of age

N	Min.	Max.	Mean	Std. Deviation
117	13	77.00	43.1765	13.0195

Table-III: Frequency of subdural hematoma in different age groups

Age Groups	Frequency	%age
≤ 18	02	3.92
19 – 45	33	64.70
≥46	16	31.37

Fig. I: CT scan brain axial view showing subdural hematoma in right parietal region.



DISCUSSION

Motor vehicles crashes are major cause of traumatic brain injury (TBI) and mainly males are suffering from it as they actively participate in everyday routine work than others. An essential diagnostic tool for many hematomas of brain is computed tomography scan which is affordable, reasonable, speedy and broadly available^{7,8}.

In our research we categorized all the individuals (patients) with head damage into 03 age groups under 18 years group, 19 to 45 years and 46 years onwards. Subdural hematoma (SDH) in middle and old age group was mostly seen which was affected with head injuries, which is matched with global studies. According to Yusuf AS study in 2014⁹ that males had higher incidence of head trauma in comparison to females that are resembled to our results. 117 patients who visited to the accidental unit of LGH, Pakistan and bearing head damage the subdural hematoma were 51(43.58%) and on the other hand no subdural hematoma were 66(56.41%). Out of fifty one cases males were 47(92.15%) & females were 4(7.84%) who presented with subdural hematoma. Their mean and range was 43 years and 13-77±13.01 years respectively. Similar findings were observed by Yusuf AS 2014⁹, Shelke et al, 2016¹⁰, Khan MK et al, 2011¹¹, Prahaladu et al, 2017¹² and Imtiaz MA, et al, 2016¹⁴.

Due to this reality that in our environment and civilization the males of this age group exposed more in driving as compared with females, that is why there is more possibility of head damage. The frequency and percentage of subdural hematoma in different ages was 33 (64.70%); 19-45 years followed by 16 (31.37%); 46 years onward and then 2(3.92%) under 18years in our study that is comparable to the findings of Prahaladu et al, 2017¹² Ali M et al, 2013¹³. This is the fact that second age group is actively involved in outside activities while last age group remain at their working places or at homes so they are less involved as compared to second group .

CONCLUSION

It was concluded from this study that subdural hematoma is more often in middle and then old age determined by computed tomography scan brain. Males were suffered more by the head injuries in comparison to females.

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