EPIDURAL HEMATOMA IN DIFFERENT AGES DUE TO ROAD TRAFFIC ACCIDENTS ON COMPUTED TOMOGRAPHY SCAN BRAIN

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ABSTRACT:

OBJECTIVES:

In developing countries, road traffic accidents are common and primarily affect middle-aged men. The aim of this study was to evaluate the frequency of epidural hematoma in people of various ages owing to road traffic incidents on computed tomography scan brain.

METHODOLOGY:

From February 2018 to January 2021, a cross-sectional descriptive study was done in the Department of Neurosurgery. A total of 460 individuals were chosen from emergency room visits due to traffic accidents. Individuals who had suffered a head injury and had an epidural hematoma on a computed tomography scan were included in the study. The frequency of epidural hematoma in different ages was determined.

RESULTS:

A total of 460 patients were enrolled in the trial, with 196 (42.60%) having epidural hematomas and 264 having no epidural hematomas (57.39%). Males accounted for 152 (77.55%) of the 196 epidural hematoma cases, while females accounted for 44 (22.45%), with an average age of 19 years and a range of 2-55±9.59 years. All the people who had a head injury were divided into three groups. The prevalence of epidural hematoma varied by age, with 75.51% (15-44 years), 20.40% (14 years), and 4.08% (>45 years) being the most common.

CONCLUSION:

It was concluded from this study that epidural hematoma determined by computed tomography scan brain is more frequent in middle age.

KEYWORDS: *Road Traffic Accidents, Head Trauma, Epidural Hematoma*

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INTRODUCTION:

The leading cause of death in our society is traumatic brain injury (TBI) secondary to road traffic accidents. TBI causes multiple neurological problems and thus increases morbidity and mortality[1]. Every year, 403 out of every 100,000 people in the United States visit an emergency room due to automobile accidents that result in head trauma[2]. In our country, the fatality rate from traumatic brain damage is estimated to be around 15%[3]. Traumatic brain injury has a significant impact on the physical, mental, and emotional health of individuals, putting additional strain on the community. The consequences of closed head injuries are extremely unpleasant and painful for patients who arrive at the hospital[4,5]. Penetrating and closed head injuries are the two types of head injuries. The skull is broken in penetrating injury, while it is not broken in

closed injury. Head injuries cause blood to accumulate, generating hematomas in various locations[6]. The presence of pooled blood between the skull and the outer Dura layer, which is frequently associated with skull fracture, is known as epidural hematoma. Patients with decreased degree of consciousness, fits, vomiting, ipsilateral dilated pupil, and decreased movement on one side of the body present clinically. Patients with signs of high intracranial pressure and internal bleeding are selected for CT scan due to skull fracture[7,8]. The goal of this study was to detect cases of epidural hematoma in people of all ages that had occurred because of motor vehicle accidents and were diagnosed by CT scan brain, and to treat them early in order to prevent morbidity and mortality. As a result, we can reduce the prevalence of disease in the community.

METHODOLOGY:

This was a descriptive cross-sectional study conducted in the emergency department of Hayatabad Medical Complex in Peshawar. This study included 460 subjects of head injury caused by road traffic incidents. Simple random sampling was used as a sample approach. All of these individuals had a CT scan of their brains without contrast. After receiving informed verbal consent, a multi slice CT scan machine was employed, and demographic information as well as CT brain findings was recorded onto a sheet. We divided all people with brain injuries into three age categories in our study: under 14 years, 15 to 44 years, and over 45 years. Excel and SPSS 20 were used to analyze the information gathered. The mean, standard deviation, and charts were used to present the quantitative and qualitative variables. Patients with closed head injuries from road traffic accidents of both genders were included, while those without head injuries and those with bleeding disorders were omitted.

RESULTS:

A total of 460 patients participated in the trial, with 196 (42.60%) having an epidural hematoma and 264 (57.39%) having none. Males made up 152 (77.55%) and females made up 44 (32.3%) of the 196 epidural hematoma cases, with a mean age of 19 years and a range of 2-55±9.59 years (Table 1). All of the people who had a head injury were divided into three groups. There were 40 (20.40%) epidural hematomas in group I (under 14 years), 148 (75.51%) in group II (15 to 44 years), and 8 (4.08%) in group III (beyond 45 years) (Table 2).

Table 1: Gender Wise Frequency of Epidural Hematoma

Gender	Frequency	Percentage
Female	44	32.3%
Male	152	77.55%
Total	196	100.0%

Table 2: Frequency of Epidural Hematoma in Different Age Groups

Age Groups	Frequency	Percentage
≤14	40	20.40%
15-44	148	75.51%
≥45	8	4.08%
Total	196	100%

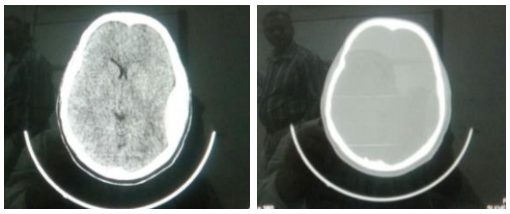

Figure 1: CT Scan Brain Axial View Showing Epidural Hematoma in Left Parietal Lobe

DISCUSSION:

TBI is most caused by car accidents, and men are disproportionately affected since they are more actively involved in daily activities. CT is one of the most essential modalities since it is less expensive, faster, and more generally available, and it is an important diagnostic tool for many brain hematomas[9,10]. The most common reports of epidural hematoma were from middle-aged adults who had sustained head injuries, which is consistent with international studies. Studies reported,[11-13] that males had a higher frequency of head trauma than females, which is consistent with our findings. Epidural hematomas were found in 196 patients (42.60%), while no epidural hematomas were found in 264 patients (57.39%). Males accounted for 152 (77.55%) of the 196 epidural hematoma cases, while females accounted for 44 (22.45%), with an average age of 19 years and a range of 2-55+9.59 years. A study conducted in India,[14] and Pakistan,[15] also found similar results. This is due to the fact that in our traditional culture and society, boys of this age group drive more than girls, rendering them more

vulnerable to head injuries. The frequency of epidural hematoma in our study was 75.51% (15-44 years), 20.40% (14 years), and 4.08% (>45 years), which is similar to the findings of Sameer C et al[16], Arfat M et al[17] and Ogolo DE et al[18]

LIMITATIONS:

Our study has several limitations. Foremost is the patient-selection bias intrinsic to all retrospective studies. Specifically, the decisions to obtain and interpret CT scans in this study were made by the neurosurgeons involved in the care of the individual patient.

CONCLUSION:

This study found that epidural hematoma, as measured by a computed tomography scan of the brain, is more common in middle age and that males are more affected by head injuries than females.

CONFLICT OF INTEREST: None

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CONTRIBUTORS

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3. **Shahid Ayub -** Critical Revision; Supervision; Final Approval