Original Article:

Evaluation of factors affecting the prognosis of patients of head injury

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Abstract:

Introduction: Traumatic brain injury (TBI) is the leading cause of death in patients and is responsible for more than 50% of all traumatic deaths. In the USA at least 5 million people (2% of the population) currently live with disabilities resulting from TBI, and each year at least 1.4 million sustain a TBI.

Material and Methods: The present study was carried out on patients of head injury, referred to Department of General Surgery at Rural Medical College & Hospital, Loni, Tal. Rahata, Dist. Ahmednagar.

100 Cases studied among the patients admitted with the head injury to Surgical Ward & ICU.

Results: Road Traffic Accident was the commonest mode of injury accounted 65% (65) cases followed by fall, 34% (34) cases and only 1% (1) case accounted under assault. This signifies Road Traffic Accident is the most common causes of the Injury in all age groups.

Conclusion: The elderly group generally tends to have injuries of a lower impact, such as those sustained in falls. This may be due to frailties associated with advanced age, such as poor eyesight, impaired balance, postural hypotension and cerebrovascular accidents. As such, these patients seem to have less associated multiple injuries or accompanying cervical injuries.

Introduction:

Traumatic brain injury (TBI) is the leading cause of death in patients and is responsible for more than 50% of all traumatic deaths. In the USA at least 5 million people (2% of the population) currently live with disabilities resulting from TBI, and each year at least 1.4 million sustain a TBI. Of these, about 50,000 die, 85 per 100,000 persons are hospitalized and 390 per 100,000 inhabitants are treated and released from an emergency department. 1 In the Netherlands, each year about 60 per 100,000 inhabitants require hospitalization and around 90 per 100,000 persons with an age of 20 years or older visit the emergency room of a hospital because of a TBI. In 2002 around 950 (6 per 100,000) Dutch persons died because of a TBI. 1

In a rapidly developing country like India, road transportation is massively increasing due to urbanization and industrialization. As a result, head injuries due to road traffic accidents (RTA) have become a daily occurrence taking an increased toll on human lives and limbs. Most of these patients are in their prime age (2nd and 3rd decade of life) and therefore have a direct social and economic effect besides the emotional burden of suffering a lifelong debilitating loss of function. 2
Material and Methods

The present study was carried out on patients of head injury, referred to Department of General Surgery at Rural Medical College & Hospital, Loni, Tal. Rahata, Dist. Ahmednagar. 100 Cases studied among the patients admitted with the head injury to Surgical Ward & ICU.

Research Design: A prospective hospital based observational study.

Study Population: In the present study 100 cases of Head Injury were studied who were admitted under General Surgery.

Duration of study: two years

Sample Size: 100 Patients.

Patient Selection

Inclusion Criteria:
1. Adults from the age of 18 years onwards.
2. Patients with a history of road traffic accident, fall or assault were included in this study.

Exclusion Criteria:
1. Pediatric cases.
2. Patients those could not be followed for reasons like: shifting of patient by patients relatives to other cities

Results:

Road Traffic Accident was the commonest mode of injury accounted 65% (65) cases followed by fall, 34% (34) cases and only 1% (1) case accounted under assault. This signifies Road Traffic Accident is the most common causes of the Injury in all age groups.

Table no 1

<table>
<thead>
<tr>
<th>Neurosurgical Management</th>
<th>No. of Cases</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Death</td>
</tr>
<tr>
<td>Conservative</td>
<td>93</td>
<td>06</td>
</tr>
<tr>
<td>Operative</td>
<td>07</td>
<td>04</td>
</tr>
</tbody>
</table>

93% (93) cases were managed conservatively out of that 6% (6) cases expired and 87% (87) patients recovered. 7% (7) cases, which underwent Neurosurgical intervention, 4% (4) expired and 3% (3) cases recovered.
Table no 2

<table>
<thead>
<tr>
<th>Other Injuries</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Injury alone</td>
<td>07%</td>
</tr>
<tr>
<td>Chest Trauma</td>
<td>03%</td>
</tr>
<tr>
<td>Facio-maxillary Injury</td>
<td>52%</td>
</tr>
<tr>
<td>Blunt Trauma to Abdomen &amp; Pelvis</td>
<td>02%</td>
</tr>
<tr>
<td>Injury to the Limbs</td>
<td>01%</td>
</tr>
<tr>
<td>Mixed</td>
<td>35%</td>
</tr>
</tbody>
</table>

Only 7% (7) of the cases had Head injury alone, rest all the patients were associated with other injuries such as Chest Trauma 03% (3), Facio-maxillary Injury 52% (52), Blunt Trauma to Abdomen & Pelvis 02% (2), Injury to the Limbs 01% (1) and Mixed injuries 35% (35). All the associated injuries had impact on Prolong Hospital Stay.

Discussion:
The head injuries which need admission to hospitals are mainly due to road traffic accidents. There is persistent increase in number of head injuries occurring due to road traffic accidents. Commonest mode of injury also changes as per age groups of the patients. Fall is the commonest mode in children. In the prospective Study of the Traumatic Coma Data Bank (TCDB), motor-vehicle crashes were the cause of injury in 55% of patient’s aged 15–25 years, whereas only about 5% suffered falls. However, in the age range above 55 years, 45% suffered falls and only about 15% were in motor-vehicle crashes.3

Age is an important and independent variable for knowing the prognosis after head injury. Also it is not subject to observer measurement variability. The prognosis for recovery from trauma as one ages is a function not only of the aged brain, but the type of injury that occurs frequently in each age group. In addition, a decline in health as one ages may predispose the aged to systemic complications after head injury. In present study age was found to correlate inversely with outcome. Younger patients having outcomes better than older ones, but difference was not statistically significant. This could probably be because of limited sample size.4

Amacher, 1987 performed retrospective analysis of 56 patients 80 or more years of age. Even if a significant proportion (60%) of old people may make a full recovery from head injury, the mortality rate is high even in those with good admissions.5

An older age is continuously associated with a worsening outcome after TBI.14. Older patients with acute intracranial haematomas have significantly higher mortality and poorer functional outcome than younger patients with similar injuries. Intracranial haematomas are larger and more common in older patients with head injury than in younger patients.
Conclusion:
The elderly group generally tends to have injuries of a lower impact, such as those sustained in falls. This may be due to frailties associated with advanced age, such as poor eyesight, impaired balance, postural hypotension and cerebrovascular accidents. As such, these patients seem to have less associated multiple injuries or accompanying cervical injuries.

References: