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Study Of Management Of Head Injury Patients At Tertiary Care Hospital.

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ABSTRACT

Traumatic Brain Injury (TBI) is a major public health problem in India. The increase in economic growth in India coupled with rise in population, motorization and industrialization has contributed to a significant increase in TBI with each advancing year. The present study was conducted at Department of surgery, of tertiary care hospital, Pune in past one year. The sample size was estimated with the help of expert. In our study design, we have included all patients randomly admitted with cause of head injury in our hospital. In our study, 78 % patients were from road accident, 10% from falling object while 12 % were fall from height. In our study, 70 % patients were found with vomiting, 55 % with headache, 20% with nausea and unconsciousness each, 7.5 % with ENT bleeding and 42.5 % with other associated clinical symptoms. On CT examination, we found 30% patients were with generalized cerebral edema, 20% fracture without intracerebral pathology and intracranial hemorrhage each, 17.5 % SDH and 5% EDH. We found good recovery in patients with fracture without internal injury, SDH and contusions. 58 % patients were managed by conservatively while 42% patients were required active surgical management. Trauma remains leading cause of head injury in present study. Necessary preventive measures & vigorous training of all medico & para-medico staff for early management of head injury can definitively reduce mortality & morbidity due to head injury.

Keywords: head, tertiary care, injury, TBI.

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INTRODUCTION

Traumatic Brain Injury (TBI) is a major public health problem in India. The increase in economic growth in India coupled with rise in population, motorization and industrialization has contributed to a significant increase in TBI with each advancing year. To assess the level of consciousness and prediction of outcome of the patient with TBI, Glasgow coma scale is universally used. The numerical grading of three separate responses provides a degree of flexibility in defining the continuum of altered level of consciousness [1]. The bedside clinical indicators are not fairly accurate and may fail to identify serious head trauma patients. Neuroradiology of trauma has undergone dramatic change in the past decade since the advents of computed tomography. The CT scan images can detect traumatic lesions of soft tissues as well as bones of skull with equal accuracy. The other simpler modality is x-ray of skull [1]. The mechanical brain damage that occurs at the time of injury cannot be repaired or reversed by therapy. But management should ensure that secondary damage does not occur. The primary neurological management is the identification and rapid treatment of localized mass lesion and raised intracranial pressure [2, 3].

METHODOLOGY

The present study was conducted at Department of surgery, tertiary care hospital, Pune in past one year. The sample size was estimated with the help of expert. In our study design, we have included all patients randomly admitted with cause of head injury in our hospital.

We have included 40 patients in our study, as per sample size estimation.

Detailed clinical examination with elicitation of proper clinical history was done with special mention of following points:

- Time, place mode and type of injury
- H/O unconsciousness
- H/O vomiting
- H/O nausea
- H/O convulsions
- H/O Headache
- H/O ENT bleeding

We used Glasgow coma scale to assess level of consciousness. It includes three responses viz. eye opening, best motor response and best verbal response. Accordingly, patients can be categorized as mild (13-15), moderate (9-12) or severe (3-8).

To correlate the clinical findings and to confirm the diagnosis we had done CT scan head of every head injury patient. The patients were further investigated and managed as per standard protocol.

Inclusion criteria

All patients with head injury who were admitted under the department of surgery during study period were included in present study.

Exclusion criteria

Patients referred after 24 hrs of head injury, operated outside, not willing to participate in present study & unknown patients were excluded.

RESULTS

Table No. 1: Clinical presentation wise patient's distribution

Clinical presentation	No. of cases (N= 40)	Percentage
Vomiting	28	70
Nausea	8	20
Unconsciousness	8	20
Headache	22	55
ENT Bleed	3	7.5
Others	17	42.5

In our study, 70 % patients were found with vomiting, 55 % with headache, 20% with nausea and unconsciousness each, 7.5 % with ENT bleeding and 42.5 % with other associated clinical symptoms like CSF rhinorrhoea, convulsions, scalp injuries etc.

Table No. 2: Incidence of symptoms related to the CT-Scan findings.

CT-Scan Report	No. of cases (40)	Percentage (%)
Generalized Cerebral Edema	12	30
Contusion	3	7.5
Fracture without intracerebral pathology	8	20
SDH (Subdural hematoma)	7	17.50
EDH (Extradural hematoma)	2	5
Intracranial Hemorrhage	8	20

In our study, on CT examination, we found 30% patients were with generalized cerebral edema, 20% fracture without intracerebral pathology and intracranial hemorrhage each, 17.5 % SDH and 5% EDH.

Table No. 3: Type of CT scan abnormality to the outcome.

CT Scan finding	No. of cases (N= 40)	Good Recovery (%)		Expired (%)	
		No. of cases	Percentage (%)	No. of cases	Percentage (%)
Fracture without IC Pathology	08	08	100	-	-
GCE	12	11	92	1	8
SDH	7	07	100	0	0
EDH	2	1	50	1	50
Intracranial Hemorrhage	8	4	50	4	50
Contusion	3	3	100	0	0

In patients of fracture without internal injury, SDH and contusion, we found good recovery.

Table No. 4: Etiology wise patient's distribution

Etiology	No. of cases (N=40)	Percentage
Road traffic	31	78
Falling object	4	10
Fall from height	5	12

In our study, 78 % patients were from road accident, 10% from falling object while 12 % were fall from height. 58 % patients were managed by conservatively while 42 % patients were required active surgical management.

DISCUSSION

Trauma is a major cause of morbidity and mortality in both developed and developing countries. The usual causes are road traffic accidents (RTAs), fall from height, occupational injuries, and assault. Mortality & morbidity due to head injury can be easily prevented by prevention & adequate management in first golden hour. In our study 78 % patients were from road accident, 10% from falling object while 12 % were fall from height. 70 % patients were found with vomiting, 55 % with headache, 20% with nausea and unconsciousness, 7.5 % with ENT bleeding and 42.5 % with other clinical symptoms. In our study, on CT examination, we found 30% patients were with generalized cerebral edema, 20% fracture without intracerebral pathology and intracranial hemorrhage each, 17.5 % SDH, and 5% EDH. In patients with fracture without internal injury, SDH and contusion, we found good recovery. 58 % patients were managed by conservatively while 42 % patients were required active surgical management [4].

Thomas A. Gennarelli et al in 1982 retrospectively demonstrated marked heterogeneity within the severe head injury group and points out that patient with the same GCS scores have markedly different outcomes depending on causative lesion. The type of lesion is very important in determining outcome as the GCS scores and both must be considered when describing severely head injured patient. In their study, patients having abnormal papillary and planter reflex showed abnormal CT scan findings in many of the cases and these signs were related to poor outcome of the patient [5].

Thomas W, Lngfit et al stated that outcome from head injury can be improved by the earliest possible removal of space occupying haematoma and early vigorous management of intracranial haematoma [6]. Jack Wilbarger et al in 1990 stated that in spite of major advances in the diagnosis and management of head injury acute subdural haematoma continues to be one of the most lethal of all intracranial injuries. Alcohol consumption in drivers is also a major cause contributing factor in road traffic accident cases [7]. Narwade N et al noted 62.4% alcohol consumption in their study. Alcohol consumption in drivers contributed not only to their injuries but also caused significant harm to other vehicular passengers and pedestrians [8]. Chaudhury et al. found GCS<8, advanced age, dilated pupil, extensor rigidity, and altered blood pressure as risk factors with bad prognosis.⁹ Scalp injury with skull fracture along with intracranial hemorrhage was the most common presentation of head injury.⁹ The predominance of contusion and laceration in scalp can be explained by the heavy blunt force, loose areolar space available for blood accumulation beneath scalp, minimal musculature of the scalp and the velocity of victim to fall on the ground [9, 10].

CONCLUSION

Trauma remains leading cause of head injury in present study. Necessary preventive measures & vigorous training of all medico & para-medico staff for early management of head injury can definitively reduce mortality & morbidity due to head injury.

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