



RESEARCH ARTICLE

OBSERVATIONAL STUDY OF "UNKNOWN" HEAD INJURY PATIENTS AT A TERTIARY CARE  
NEUROSURGICAL CENTRE

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ABSTRACT

**Context:** A large number of patients are admitted to hospitals in large cities without any identification. These "unknown" patients represent a unique problem in developing countries. There is no systematic study in world literature on this subgroup of patients. **Aims:** to elucidate the natural history and outcome of traumatic brain injury patients admitted in the department of neurosurgery as "unknowns". **Settings and design:** retrospective analysis of all traumatic brain injury patients admitted to the department of neurosurgery as "unknowns", between January 2017 and December 2017. **Results:** ninety patients were admitted as unknowns over a period of one year. 81 patients were males and 33 patients became known during their hospital stay. 34 patients were discharged from the hospital, whereby 12 with good recovery and 14 with moderate and 6 with severe disability and 2 in vegetative state. 73 patients were managed conservatively and about 17 patients were treated by surgery, most often for cerebral contusion. About 56 patients died inspite of the best possible treatment. 25 patients were discharged to home and 9 patients were sent to destitute home, as they remained unknown, with the help of social worker in our hospital. **Conclusions:** Unknown head injury patients are usually neglected. Their management from prehospital to treatment and discharge is fraught with challenges. They need special care for which staff should be well trained and hospital must have economic resources. A good network of social workers help in rehabilitating these patients. There is a need to upgrade ourselves in term of taking fingerprints and biometric to improve identification accuracy of unknown patients.

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INTRODUCTION

Traumatic brain injury is a critical public health and socioeconomic problem that affects all societies throughout the world (Kraus, 1990 and London, 1997). More than 10 million people world wide suffer TBI serious enough to result in death or hospitalization each year. In the united states alone, there were an estimated 1,565,000 TBIs, resulting in 2,000,000 emergency department visits and almost 300,000 hospital admissions annually, with associated costs reaching \$76.5 billion and 51,000 deaths (Rutland-Brown, 2006). In India, the incidence of head injury is steadily increasing with urbanization and increasing number of vehicular population. In 2014, the total number of vehicles in India approximately amounted to 191 million and in Tamil Nadu state was about 20.9 million and in Chennai it was about 4.4 million. A Report on Road Accidents in India 2016, published by Transport Research wing under Ministry of Road Transport & Highways,

Government of India, has revealed that the states of Uttar Pradesh and Tamil Nadu have accounted for maximum number of deaths in 2016. As per the data cited in the report, the country recorded at least 4,80,652 accidents in 2016, leading to 1,50,785 deaths. The number suggests that at least 413 people died everyday in 1,317 road accidents. Further breaking down the statistics, the data reveals that at least 17 deaths occurred in road accidents in 55 accidents every hour in the given time period. The world health organisation (WHO) forecasts that by 2030, TBI be a leading cause of disability and death (4). In such a scenario, many patients are admitted to hospitals as unknowns, after having met with accidents. What happens to these patients after admission is not reported in world literature. We are working in Institute of neurosurgery, Madras Medical College, Chennai and many such unknown patients are being referred to us daily. We tried to analyze data pertaining to this group of patients for understanding the mode of injury, presentation, treatment and outcome after head injury.

Aim

To elucidate the natural history and outcome of TBI patients admitted in the department of neurosurgery as "unknowns"

## MATERIALS AND METHODS

Retrospective analysis of the departmental case records from January 2017 to December 2017 was done. During the study period, 90 consecutive unidentified head injury patients were admitted. We collected data regarding the mode of injury, demography, clinical presentation, condition at admission, CT findings, treatment given, hospital stay and outcome of these patients at discharge. Data analysis was done. All patients were clinically evaluated by a team comprising of doctors from surgical, medical and orthopaedics specialities in the emergency department and subsequently admitted and treated at neurosurgery department. No patient was deprived of any medicine, ICU care, CT scan or surgery because of his/her unknown identity.

## RESULTS

### Demography (Gender)

Gender	Number of Patients	Percentage
Male	81	90
Female	09	10
Total	90	100

### Demography (Age)

Age Group (Years)	Number of Patients	Percentage
<20	01	01.11
20-29	10	11.11
30-39	17	18.89
40-49	23	25.56
50-59	12	13.33
>=60	27	30.00
TOTAL	90	100

### Cause of Injury

Cause of injury	Number of patients	Percentage
Rta	78	86.67
Assault	01	01.11
Fall from height	04	04.44
Tta	02	02.22
Unknown cause	05	05.56

### Gcs at Admission

GCS	Number of Patients	Percentage
13-15	06	06.67
12-9	25	27.78
<=8	59	65.56

### Type of Injury

type of brain injury	Number of patients	Percentage
EDH	04	04.44
SDH	18	20.00
Cerebral Contusion	32	35.56
DAI	22	24.44
SAH	08	08.89
Skull Fracture	06	06.67

### Associated Injuries

Other injuries	Number of patients	Percentage
Chest injury	31	34.44
Abdominal injury	02	02.22
Limb fracture	08	08.89
Spinal injury	04	04.44

### Treatment

Type of treatment	Number of patients	Percentage
Conservative	73	81.11
Surgery		
Decompressive craniectomy	13	14.44
Craniotomy	02	02.22
Depressed fracture excision	02	02.22
Burr hole evacuation	00	00.00

### Complications

Complications	Number of patients	Percentage
Pneumonia	13	14.44
Meningitis	01	01.11
Septicemia	04	04.44
Wound infection	07	07.78
Csf leak	01	01.11
Total	26	28.89

### Gos at discharge

Glasgow outcome scale	Number of patients	Percentage
Good recovery	12	13.33
Moderate disability	14	15.56
Severe disability	06	06.67
Vegetative state	02	02.22
Death	56	62.22

### Discharge location

Discharge location	Number of patients	Percentage
Home	25	27.78
Referred to district hospital	00	00.00
Destitute home	09	10.00

## DISCUSSION

In our study, there was one patient in the paediatric age group and 27 patients were above 60 years of age. Out of 90 patients, 33 (33.67%) could be identified during hospital stay. 34 patients were discharged from the hospital, whereby 12 with good recovery and 14 with moderate and 6 with severe disability and 2 in vegetative state (Liew, 2009), 73 patients were managed conservatively and about 17 patients were treated by surgery, most often for cerebral contusion. In a study conducted by wanger et al, they reported approximately one third of patients with moderate head injury and half of patients with severe head injury were operated, most of them being for cerebral contusions and/or subdural hematomas (Wagner, 2000). About 56 patients died inspite of the best possible treatment. Data available in literature indicate a variability in mortality rates from 6.3 per 100,000 to 39.3 per 100,000 (7–19). Mortality following head injury has been reported to be in the range of 39 – 51 % (Lannoo, 2000 and Bulger, 2002). 25 patients were discharged to home and 9 patients were sent to destitute home, as they remained unknown, with the help of social worker in our hospital. These group of patients with unknown identities present innumerable challenges in their management. They are usually found lying on the road in unconscious state and brought to hospital by policemen and public who are ill equipped and often not knowing how to handle patients with severe injuries. Their prehospital management is usually improper and lack of proper transport facilities further aggravates their condition. Very often such patients are destitute and their injuries are compounded by presence of debility because of poor nutrition, other medical

conditions like diabetes, hypertension, substance abuse and mental illnesses. Therefore, it is imperative that these patients be evaluated with high index of suspicion for above conditions. During their hospital stay, the role of paramedical staff is of paramount importance; their daily nursing care in the absence of a relative is a challenging task. It needs a team of trained and empathetic nursing staff along with a physiotherapist, dietician, psychologist and social worker who can help and rehabilitate them. Treatment of such unknown patients can entail a huge expenditure and therefore, every hospital should allocate funds for the above purpose and only those patients who are in need of higher medical care should be referred to higher centre

## Conclusion

Unknown head injury patients are usually neglected. Their management from prehospital to treatment and discharge is fraught with challenges. They need special care for which staff should be well trained and hospital must have economic resources. A good network of social workers help in rehabilitating these patients. There is a need to upgrade ourselves in term of taking fingerprints and biometric to improve identification accuracy of unknown patients .

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