Practical Challenges in the Management and Outcome of Unknown Patients with Head Injury

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Abstract

Background Majority of road accidents are treated at nearby private hospitals. Head injury patients whose identity is not established are invariably being treated at government hospitals. The factors influencing the management and outcome of such unknown patients are possible only in government hospitals. Limited studies are available related to these unknown patients.

Objective This study attempted to analyze the management issues in such patients and tried to find solutions that will improve the outcome.

Methods It was an observational study over 2 years. All patients whose identity could not be established at admission were studied. Standard traumatic brain injury protocols were followed. Issues and challenges in managing these patients were noted. Many challenges popped up once patient was shifted out of intensive care unit and were studied.

Results Eighty-five patients were studied with male preponderance. Common age group was 41 to 60 years. The main cause of head injury was road traffic accident. Seventy-six patients were severely injured. Acute subdural hematomas was the most common computed tomography finding (36 patients). Sixty-nine patients were managed conservatively and 16 needed surgery. Forty-nine patients died in hospital, and other patients recovered well. Twenty-two patients were discharged home and 11 took discharge against medical advice after being identified by relatives. None were accommodated into destitute homes even after recovery.

Conclusion Unknown patients usually have poor outcome with more deaths in spite of standard care. Their management is fraught with challenges. They need special care for which staff should be motivated; hospital must have good network to establish identity.

Keywords
- unknown patients
- destitute patients
- traumatic brain injury

Introduction

India ranks first in 2018 road traffic accidents (RTA) deaths among 199 countries per the World Road Statistics, followed by China and United States.[1] RTA is the most common cause (60%) of traumatic brain injury (TBI) in our country, followed by falls and assaults (25 and 10%), respectively,[2] with an accident occurring every minute causing death every 8 minutes.[3]

Crucial information regarding the traumatic event is essential for TBI evaluation and management, and such information is usually missing when the victim's identity is unknown. The majority of these patients are usually dropped off for treatment at government hospitals, and

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factors influencing management or outcomes are rarely reported. Data regarding unknown TBI victims are available only in such institutions, where management challenges and outcomes are likely under-reported.[4] Naturally, the time of accident or duration of unconsciousness cannot be ascertained for such cases. We studied a group of victims of hit and run RTAs or found lying unconscious by the police or good Samaritans to identify key factors in management.

Materials and Methods

Between April 2017 and December 2019, 85 TBI patients whose identity was unknown at the time of admission were treated at King George hospital, Andhra Medical College in Visakhapatnam, India. A group of 69 males (82%) and 16 (18%) females were analyzed for special nuances of TBI care and eventual outcomes. All patients were managed as per standard treatment TBI protocols.

The patients were admitted to the neurosurgical intensive care unit (ICU) and standard treatment was administered, and intimation to police/administration/higher authorities was made to trace the identity. Patients remaining in the ICU experienced few issues related to the unknown status, but many challenges were identified after transferring them to the general wards. Practical problems such as feeding, clothing, daily needs, and restricting movement demanded significant resources in an already challenged situation. Safe bed restraints were difficult and not always effective due to lack of family attendants, and few patients temporarily left the wards (neighboring patients/families often helped in these cases). Fortunately, highly motivated nursing staff and paramedics aided with these issues decreased such disturbances to a minimum.

Twenty-two patients recovered and were ready for discharge, but required further consideration due to language barrier or other support requirements. Nongovernmental organizations admitted them for further care, and expired patients were sent to the mortuary (per institutional protocols) but without provision for DNA sampling.

Results

Out of 85 unknown patients, 54 cases were identified (52 during the hospitalization), and 42 (49.41%) were between 41 and 60 years of age (2 < 20 years; ►**Fig. 1**). The age is approximate and 29 of the unknown patients were identified within 5 hours, 8 patients by 1 day. In 11 cases it took 3 -5 days, and 35 patients remained unknown till death (►**Table 1**). Relatives recognized 36 of the patients and police or administration team identified 16 patients, while 33 patients remained unidentified at the end of our study.

Mode of injury was RTA in 50 cases (eye witnesses), and 35 patients were found unconscious; 3 patients later gained consciousness to give a history of assault (►**Fig. 2**). The majority of cases (49) were brought by ambulance, 22 by police, and 14 by good Samaritans. At admission, 34 patients

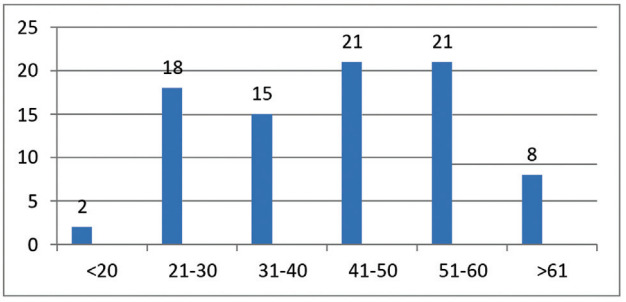

Fig. 1 Age distribution.

Table 1 Duration of being unknown

Duration of being unknown	Number of patients
1–5 hours	29
5–24 hours	8
3–5 days	11
Till death	35
Till DAMA	2

Abbreviation: DAMA, discharge against medical advice.

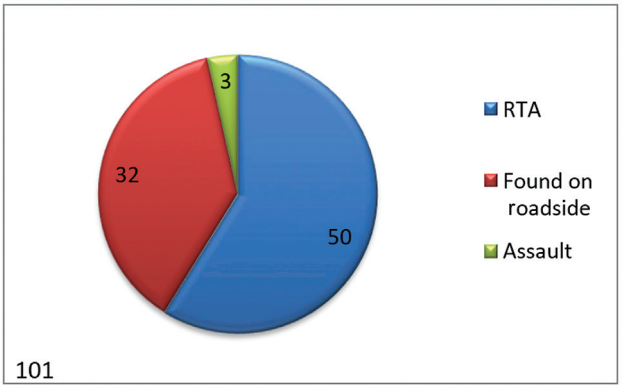

Fig. 2 Mode of injury. RTA, road traffic accident.

(40%) had a Glasgow Coma Scale (GCS) score of less than 4, (29 of these expired), and 42 patients (49.41%) had a GCS 5 to 8 (15 died), and the 2 patients with a GCS more than13 survived (►**Table 2**). The most common associated injury was limb injury followed by faciomaxillary fractures. More than 50% of patients presented with therapeutic challenges like airway obstruction, inability to evaluate other systems, or assess underlying comorbidities.

Clinically, 52 patients had lacerations, 21 had contusions, and periorbital edema was noted in 9 cases. Acute subdural hematoma (SDH) with edema was the most common finding followed by compound fractures, contusions, and chronic SDH (►**Fig. 3**). Among the 85 patients, 69 were managed conservatively and 16 required surgery (10 decompressive craniectomy, 5 craniotomy for chronic SDH, and 1 skull fracture elevation. Consent for surgery was given by administration (resident medical officer or superintendent) (►**Table 3**).

Table 2 Presentation of the patient at admission

GCS score	No of patients	Percentage of patients	No. of patients who died	Group-specific mortality (%)
<4	34	40.00	29	85.29
5–8	42	49.41	15	35.71
9–13	7	8.23	5	71.42
>13	2	2.35	0	0
Total	85		49	

Abbreviation: GCS, Glasgow Coma Scale.

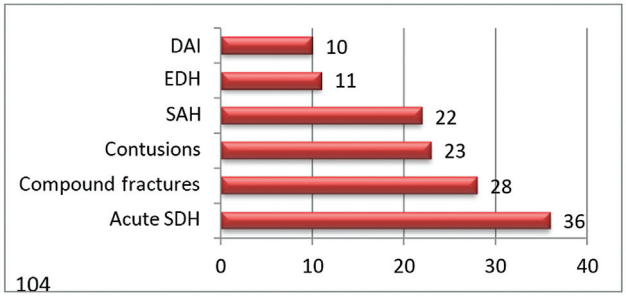

Fig. 3 Computed tomographic findings. DAI, Diffuse Axonal Injury; EDHSAH, Extra dural Hematoma Subarachnoid Hemorrhage; SDH, subdural hematoma.

Table 3 Type of operative procedure

Decompressive craniectomy	10
Craniotomy for chronic SDH	5
Depressed fracture elevation	1

Abbreviation: SDH, subdural hematoma.

Of the 85 unknown TBI victims, 36 survived and 49 died due to the injuries. Of the 69 patients managed conservatively, 30 were alive and 39 expired. In the operative cohort of 16 cases, 6 were alive and 10 expired (►**Table 4**). Among the identified group (52 cases) 33 were alive and 19 died, and in the unidentified group of 33 cases, 3 were alive and 30 expired. The patients who were stable and transferred to other departments were also discharged to home (►**Table 4**).

Discussion/Conclusion

Nath et al[5] reported that males in the fourth and fifth decades were the most common unknown TBI victims (98%) of RTA. Our study and others suggest that majority of unknown patients had a GCS less than 8 at the time of admission, and had associated limb injuries\suggesting increased severity of trauma. The majority of unknown patients were brought by ambulance and a few by the policeman or good Samaritans. Lacerations and bruises were the main visible injuries identity established of the majority within 5 days (48 patients).

Most of the cases were managed conservatively and, decompressive craniectomy was most commonly performed. More than half of the unknown patients expired, similar to other studies, suggesting these victims are usually neglected with worse outcomes in comparison to other TBI patients. ►**Table 4** clearly shows the mortality risk of the unknown TBI victim.

Despite adequate care, the outcomes of unknown patients with TBI are poor since crucial details regarding the traumatic event are often missing. Relevant health information is not available, and management is more challenging without the aid of a family support system. Existing systems need to be strengthened in identifying unknown victims, and resources are necessary to properly manage these demanding situations.

Table 4 Outcome of anagement in unknown patients

Outcome status				Status at discharge	
Alive	36	Discharged	22	Discharged to home (family)	22
		LAMA	11	LAMA/DAMA	11
		Absconded	3	Absconded	3
Dead	49	Identified	19	Transferred	4
				Sent to destitute center	–
		Unidentified	30	Refereed to district hospital	–
Total	85				

Abbreviation: DAMA, discharge against medical advice.

Conflict of Interest
None declared.

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