

Management and outcome of unknown patients with head injury in tertiary health-care center



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ABSTRACT

Background: Patients who are admitted to government hospitals without any personal, family, or identification details are categorized as unknown patients or unidentified patients or destitute patients. Managing unknown patients pose unique challenges in developing countries, particularly in India, where there are significant medicolegal issues, humanitarian concerns, and treatment and rehabilitation challenges. **Aims and Objectives:** Our study aims to investigate the demographic characteristics and outcomes of unidentified patients in our health-care facility and to evaluate the quality of care provided to them with the intention of enhancing it. **Materials and Methods:** It is a prospective study conducted in the Department of Neurosurgery, Jayarogya Hospital, Gajra Raja Medical College, Gwalior, India, which is a tertiary care center. The study was conducted for a duration of 2 years between April 2021 and March 2023 in which 50 patients of traumatic brain injury (TBI) whose identity was unknown at the time of admission were analyzed. **Results:** Out of the 50 TBI patients with unknown identities, 21 patients survived while 29 patients died as a result of their injuries. Among the 38 patients who were managed conservatively, 17 patients survived while 21 patients died. Of the 12 patients who underwent surgery, 4 survived while 8 patients died. The stable patients who were transferred to other departments were discharged to their homes. **Conclusion:** Our study highlights the high mortality risk associated with unknown TBI patients. Due to the lack of crucial details about the traumatic event and the absence of a family support system, managing these patients are more challenging, and relevant health information is often unavailable. Improvements in identifying unknown victims are necessary, and resources must be allocated to address this challenging situation properly.

Key words: Unknown patients; Traumatic brain injury; Unidentified patients; Destitute patients; Head injury

INTRODUCTION

Patients who are admitted to government hospitals without any personal, family, or identification details are categorized as unknown patients or unidentified patients or destitute patients. There are several reasons why these patients are unable to provide any information about themselves, including incidents such as road traffic accidents (RTAs), assault, gunshot wounds, falls from heights, burns, and mechanical injuries. Consequently, clinicians are not able to get their patient's medical history, allergy information, or any other relevant

information, which can create difficulties in making treatment decisions that are legally, ethically, and economically sound.

Managing unknown patients pose unique challenges in developing countries, particularly in India, where there are significant medicolegal issues, humanitarian concerns, and treatment and rehabilitation challenges. Clinicians face difficulties in providing adequate care for these patients due to the lack of information about their medical history, which can lead to delays in diagnosis and treatment, resulting in a worse prognosis. Therefore, it is essential to

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find solutions to these challenges to ensure that patients receive timely and effective medical care.¹

When an unknown patient arrives at a trauma center, it can cause anxiety among health-care professionals. Treating these patients can be challenging and raises several moral, medical, and legal concerns, particularly in underdeveloped nations with limited resources. These challenges can lead to a worse prognosis for unknown patients. Unfortunately, there have been no significant improvements in the care of unknown patients due to a lack of interest in the topic.

To address the challenges associated with treating unknown patients, hospitals have implemented policies to ensure that these patients receive the necessary medical care. Unknown patients, in particular, receive free treatment throughout their entire hospital stay to ensure that they receive the care they need without financial burden.²

Head injury is a significant health concern as it is the leading cause of death and disability, creating a burden on health-care resources. It is responsible for the majority of accidental deaths and two-thirds of hospital trauma deaths. Among younger patients, traumatic brain injury (TBI) is the primary cause of death. The rate of accidents, particularly TBI, is increasing in developing countries due to factors such as growing traffic, industrialization, falls from height, and ballistic trauma. Many of these patients are brought to hospitals by bystanders, or referred from nearby hospitals, and often their names and personal information are unknown at the time of admission.³

Dealing with unknown and unaccompanied patients is a major challenge in health-care settings, as evidenced by literature searches that highlight difficulties in managing them, from pre-hospital care to treatment and rehabilitation. Such patients often require more hospital resources, such as nursing care, and are at a higher risk of morbidity and mortality. They also tend to spend more time in hospitals both before and after their discharge. To support these patients, our hospital has established measures such as a designated fund for consumables and a non-profit organization to address their other needs.⁴

Our study aims to investigate the demographic characteristics and outcomes of unidentified patients in our health-care facility and to evaluate the quality of care provided to them with the intention of enhancing it. To our knowledge, there have been no prior research studies on this specific group of unknown patients at our trauma center. Therefore, we aimed to examine the range of unidentified patients who seek treatment at our hospital trauma center.

Aims and objectives

Our study aims to investigate the demographic characteristics and outcomes of unidentified patients in our health-care facility and to evaluate the quality of care provided to them with the intention of enhancing it.

MATERIALS AND METHODS

It is a prospective study conducted in Department of Neurosurgery, Jayarogya Hospital, Gajra Raja Medical College, Gwalior, India, which is a tertiary care center. The study was conducted for a duration of 2 years between April 2021 and March 2023 in which 50 patients of TBI whose identity was unknown at time of admission were analyzed.

TBI is defined as an insult to the brain caused by an external physical force that may produce a diminished or altered state of consciousness, which results in impairment of cognitive abilities or physical functioning.

All patients were managed as per standard treatment TBI protocols. After being admitted to the neurosurgical intensive care unit (ICU) and receiving standard treatment, efforts were made to identify the unknown patients by notifying the relevant authorities. While these patients faced minimal issues while in the ICU, several challenges emerged after they were transferred to general wards, including the provision of basic needs such as feeding, clothing, and movement restrictions, which placed additional strain on limited resources. Bed restraints were not always effective due to the absence of family attendants, and a few patients left the wards temporarily, though neighboring patients and families occasionally offered assistance. Despite these challenges, dedicated nursing staff and paramedics minimized disruptions. Non-governmental organizations provided additional care for these patients, while deceased patients were sent to the mortuary following institutional protocols, but deoxyribonucleic acid sampling was not available.

RESULTS

Our study included analysis of 50 unknown patients. Among the 50 unknown patients, 41 (82%) were males and 9 (18%) were females (Table 1). In terms of age distribution, majority of patients (38) were in the age range of 31–60 (Figure 1). Average age of patients was 44, with a standard deviation of 12.6.

Table 1: Gender distribution

Gender	No. of patients
Male	41
Female	9

The time taken for identification of patients from being unknown was 5 h for 18 patients. It took 24 h for another 15 patients to be identified, while 8 patients were identified between 3 and 5 days, but 7 patients could not be identified even till their death (Figure 2).

Among the patients in the study, 26 patients were recognized by their relatives, while 15 patients were identified by either the police or the administration team. At the conclusion of the study, 9 patients remained unidentified. In 30 cases, the primary cause of injury, as reported by eyewitnesses, was attributed to RTAs. In addition, out of the total of 20 patients who were initially found unconscious, 5 patients eventually regained consciousness and provided a history of assault. In terms of transportation to the hospital, 35 cases were brought by ambulance, while 10 cases involved the intervention of the police, and 5 cases were attended to by nearby passengers (Figure 3).

Upon admission, 20 patients (40%) had a Glasgow Coma Scale (GCS) score of <4 of which 15 of them expired, while 21 patients (42%) had a GCS score between 5 and 8, of which 10 expired. Only 2 patients had a GCS score of more than 13 and all survived (Table 2 and Figure 4).

Limb injury was the most common associated injury, followed by maxillofacial fractures. More than half of the patients had therapeutic challenges such as airway obstruction or inability to evaluate underlying comorbidities. On external examination, 32 patients had lacerations, 21 had contusions, and 9 had periorbital edema. The most common findings on non-contrast computed tomography scan were acute subdural hematoma with mass effect, followed by fractures and contusion. Of the 50 patients, 38 were managed conservatively, while 12 required surgery. Surgeries included 8 decompressive craniectomies, 3 craniotomies for contusion, and 1 skull fracture elevation (Table 3). When required, in case of unidentified patient, administration (resident medical officer or superintendent) provided consent for surgery.

Out of the 50 TBI patients with unknown identities, 21 patients survived while 29 patients died as a result of their injuries. Among the 38 patients who were managed conservatively, 17 patients survived while 21 patients died. Of the 12 patients who underwent surgery, 4 survived while 8 patients died. The stable patients who were transferred to other departments were discharged to their homes (Table 4).

DISCUSSION

According to Nath et al., the most common unknown TBI victims of RTAs are males between the ages 40 and 60.⁵ Our study and others suggest that majority of

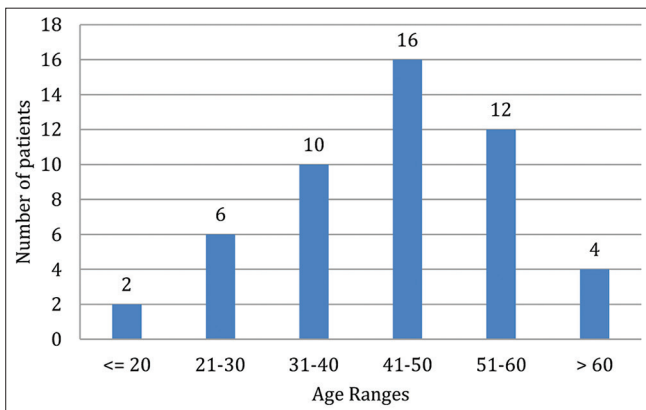


Figure 1: Age distribution

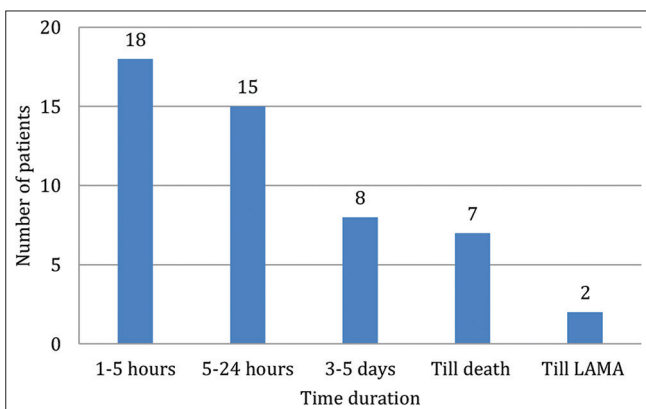


Figure 2: Distribution of duration being unknown. LAMA: Leave against medical advice

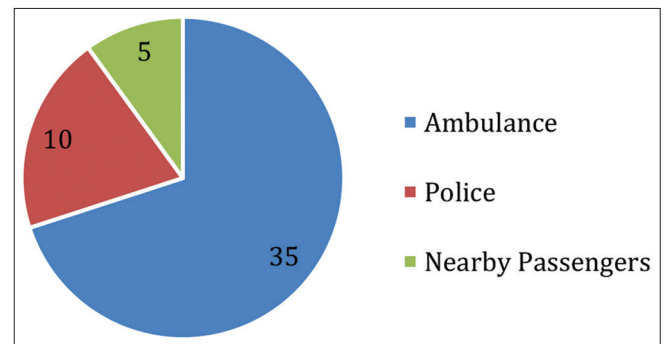


Figure 3: Transportation to hospital

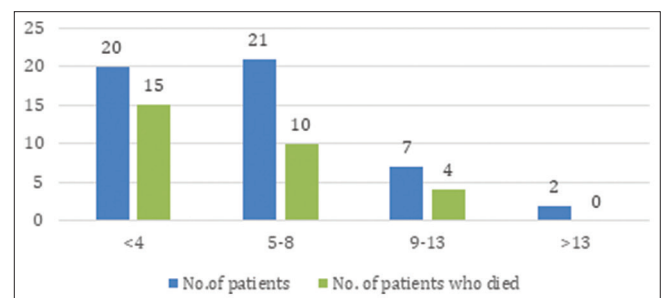


Figure 4: Correlation of Glasgow Coma Scale (GCS) and patient deaths

Table 2: Presentation at the time of admission

GCS	No. of patients	Percentage of patients	No. of patients who died	Group specific mortality percentage (%)
<4	20	40	15	30
5–8	21	42	10	20
9–13	7	14	4	8
>13	2	4	0	0

GCS: Glasgow Coma Scale

Table 3: Type of operative procedure

Type of operative procedure	No. of patients
Frontotemporoparietal decompressive craniectomy	8
Craniotomy for contusion	3
Depressed fracture elevation	1

Table 4: Outcome status

Patient survival status	No. of patients	Outcome status	No. of patients
Alive	29	Identified	22
		Unidentified	7
		Discharged	15
Dead	21	LAMA	4
		Absconded	2
Total	50		

LAMA: Leave against medical advice

Table 5: Comparison of results from different studies

S. No.	Study	Outcome (%)	
		Alive	Death
1.	Vijayasekhar et al.	43	57
2.	Singh et al	62	38
3.	Liew et al.	85	15
4.	Present study	42	58

unknown patients have a GCS score of less than 8 at admission time and have associated limb injuries, indicating a higher severity of trauma. Most unknown patients are transported by ambulances, while a few are brought by police or bystanders. Lacerations and bruises were the most common visible injuries, with most of the cases managed conservatively, and decompressive craniectomy being the most common surgical procedure.

Ahmad et al.,⁶ studied 325 unidentified patients; 193 (65%) could be identified during the hospital stay. In our study, similar results are seen; 82% being identified at the end of study. This process has aided in recovering of patients. Most of studies such as Vijayasekhar et al.,⁷ and Singh et al.,⁸ have poor prognosis of unknown TBI patients indicating that these patients are often neglected and have poorer outcomes compared to other TBI patients comparable to

result of our study. Few studies like Liew et al.,⁹ showed better outcome in unknown TBI patients as 85% patients recovering (Table 5).

Limitations of the study

The limitation of the present study was small sample size. Also, the study did not exclude patients with other associated injuries in addition to brain injury.

CONCLUSION

Our study highlights the high mortality risk associated with unknown TBI victims. Due to the lack of crucial details about the traumatic event and the absence of a family support system, managing these patients is more challenging, and relevant health information is often unavailable. Improvements in identifying unknown victims are necessary, and resources must be allocated to address this challenging situation properly. We tried to focus through this study on need for better protocol for management of unknown patients of head injury which can be lifesaving and can drastically decrease mortality rate.

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ETHICAL COMMITTEE APPROVAL

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NK- Definition of intellectual content, literature survey, prepared first draft of manuscript, implementation of study protocol, data collection, data analysis, manuscript preparation, and submission of article; **VKK**- Concept, design, clinical protocol, manuscript preparation, editing, and revision; **AS**- Review manuscript, preparation of tables and graphs, coordination, and manuscript revision.

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