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"Unidentified patients in emergency room: Navigating trauma in India's healthcare system - A Case Series."

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Abstract :
Background: India leads in road traffic accident (RTA) deaths, according to the 2018 World Road Statistics. Most unidentified patients exhibit poor Glasgow Coma Scale (GCS) scores ,often less than eight , heightened trauma severity, and suboptimal outcomes despite standard treatment. Our study concentrates on individuals involved in hit-and-run RTAs or found unconscious and brought to the emergency department and their final outcome.
Case Presentation: We are presenting a case series featuring five patients admitted to our hospital for treatment. At the time of admission, all these patients' identities were unknown.
We did not face any legal challenges in managing the unidentified patients as we followed preestablished protocols. We report a case series of five male patients who had been admitted after road traffic accidents. All of them regained consciousness after conservative management. These complex cases frequently led to extended hospital stays, underscoring the intricacies of providing care to individuals with uncertain medical histories. All of the patients were treated and successfully discharged.
Conclusion: Addressing challenges with unidentified adult patients requires proactive measures like staff training and improved resources. In a developing nation, prioritizing public awareness on road safety, prehospital trauma care, and enhancing healthcare delivery, especially in hospitals, is essential for optimal outcomes.
Keywords: Destitute, Unidentified, Trauma, Emergency room, Unconscious

BACKGROUND:

India leads in road traffic accident (RTA) deaths, according to the 2018 World Road Statistics [1]. RTAs contribute to 60% of traumatic brain injuries (TBIs) in our nation, with falls and assaults at 25% and 10%, respectively[2]. Most unidentified patients exhibit poor Glasgow Coma Scale (GCS) scores, heightened trauma severity, and suboptimal outcomes despite standard treatment [3]. In India, with a population of 1.4 billion and a per capita GDP of $2,612, pervasive economic challenges affect both urban and rural areas, particularly impacting families dealing with severe illnesses and individuals lacking familial support[4]. Collecting crucial details about traumatic events is challenging, especially when the victim's identity is unknown. This case series aims to

shed light on the intricacies within India's healthcare landscape, particularly delving into the nuanced challenges of road traffic injuries. The objective is to scrutinize the outcomes of such cases within the confines of a tertiary care center, offering a thorough exploration of the healthcare system's intricacies when dealing with unknown patients. Our study concentrates on individuals involved in hit-and-run RTAs or found unconscious and brought to hospitals. The primary goal is to identify critical factors for effective management, providing valuable insights into the complexities of healthcare provision in such scenarios.

CASE DESCRIPTION:

We are presenting a case series featuring five patients admitted to our hospital for treatment. At the time of admission, all these patients' identities were unknown.

Case-I

A twenty-year-old male arrived at our Trauma and Emergency Unit during the night following a suspected traffic accident on the road. Initial measures included a primary survey, stabilization with intravenous fluids, antibiotic coverage, analgesics, and Levetiracetam. The patient, found unconscious, exhibited multiple facial injuries, bleeding from the ear and nose, and a laceration on the right eyelid. The smell of alcohol suggested intoxication.

A comprehensive assessment involved X-rays of the spine, chest, pelvis &bilateral hips (PBH)[Figure1c], and E-fast. Urgent non-contrast computed tomography (NCCT) of the head with 3D facial imaging and whole spine, alongside routine blood workup including complete blood profile (CBC), Renal function test (RFT), Liver function test (LFT), random blood sugar (RBS), blood grouping, and rapid viral card tests(HIV, HCV, HBsAg), were recommended. The Emergency resident consulted Otorhinologists, Orthopedicians, Neurosurgeons, Ophthalmologists, and Oral and Maxillofacial Surgeons (OMFS) for further evaluation and management.

NCCT head (Figure1 a & b) revealed a linear, minimally displaced right zygomatic arch, comminuted displaced fractures of all walls of the right maxillary sinus, tiny air foci in the right anterior frontal region (pneumocephalus), soft tissue hematoma in the right periorbital area, and a 2mm Epidural Hematoma (EDH) in the left frontal convexity.

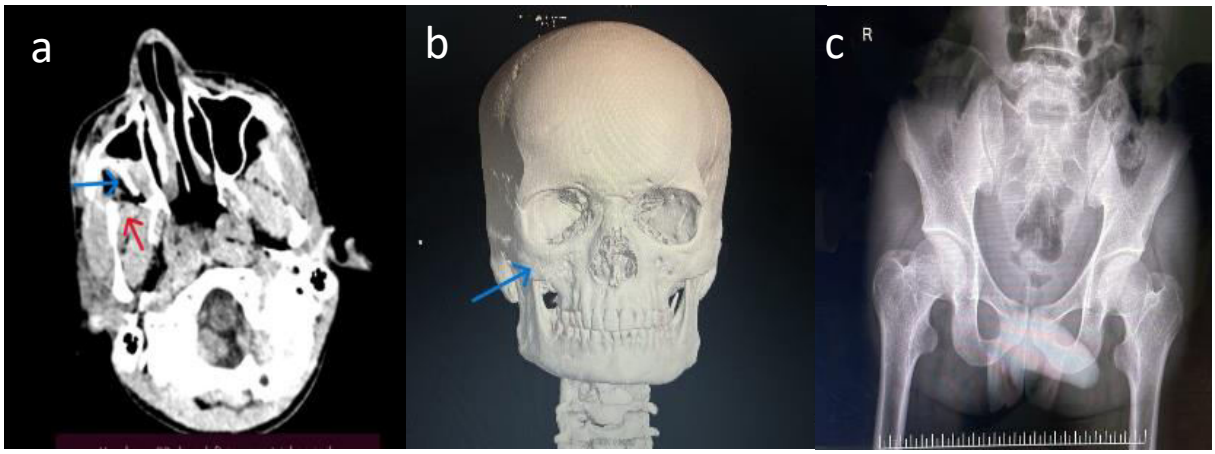

Figure 1. Photograph 'a' NCCT head in axial view blue arrow showing communitaed fracture of maxilla and red arrow showing hematoma; Photograph 'b' 3D face reconstruction blue arrow pointing fracture; Photograph 'c' normal PBH xray in AP view.

Blood work was within normal range (Table I), and E-fast was negative. The Ophthalmologist sutured the laceration on the right eyelid, scheduling a follow-up in 10 days at the outpatient department. The Neurosurgeon, OMFS, and Ophthalmologist collectively recommended conservative management.

The patient regained consciousness six hours post-admission, providing identifying information as family members arrived the following day. Throughout his hospital stay, conservative management was pursued, leading to his discharge on the fourth day with prescribed medications.

Case-II

A thirty-year-old male was brought to our Trauma and Emergency Unit by bystanders, discovered unconscious and visibly intoxicated with alcohol, sporting a head injury. On examination, his Glasgow Coma Scale (GCS) was 8/15, and he was drowsy with a laceration on the right side parietal region of the head. He was intubated to protect the airways. The Medical Social Service Officer (MSSO) was promptly notified. An urgent non-contrast computed tomography (NCCT) of the head with a whole spine, E-fast, chest x-ray, and posteroanterior (PBH) x-ray were ordered, accompanied by routine blood workup.

Symptomatic management ensued, incorporating adequate intravenous fluids, antibiotics, antacids, antiemetics, analgesics, anticonvulsants, and thiamine. The NCCT head revealed bilateral acute subdural hematomas (left>right) with diffuse cerebral edema. The CT spine unveiled C3-C4 fused vertebrae (Klippel-Feil deformity) with mild scoliosis.

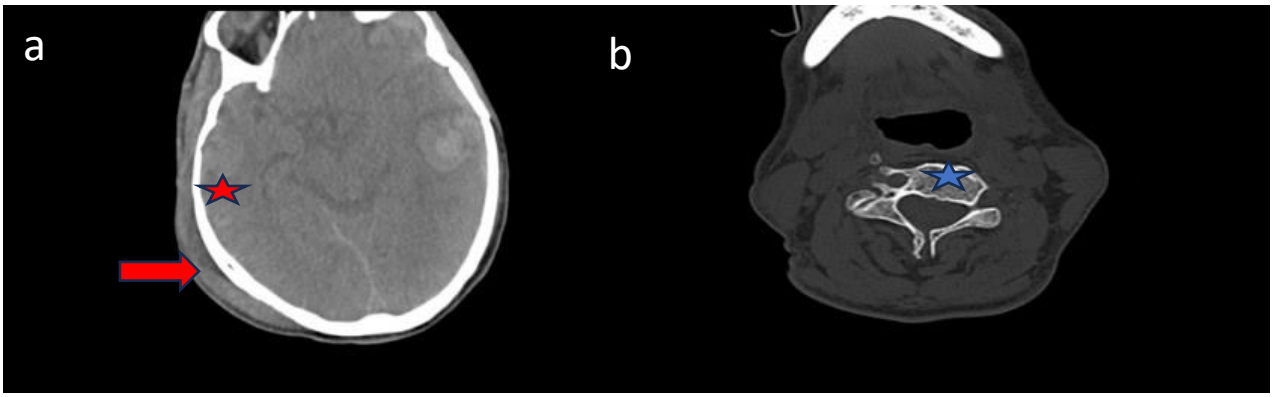

Figure 2. Photograph 'a' NCCT head red arrow showing scalp hematoma and red star showing crescent shaped blood attenuating density in the right frontal-parieto-temporal region suggestive of subdural hematoma; Photograph 'b' blue star showing C3-C4 fused vertebrae.

The chest x-ray identified multiple left-sided rib fractures, left-sided hemothorax, and pneumothorax. E-fast indicated mild pericardial effusion.

CBC disclosed a platelet count of 48,000/microliter, necessitating an urgent transfusion of 4 units of Random Donor Platelets (RDP); however, other parameters were within normal limits (Table I). Expert opinions were sought from neurosurgery, cardiothoracic surgery, orthopedics, and cardiology.

Under the guidance of the cardiothoracic surgeon, an intercostal drain (ICT) was inserted on the left side. Neurosurgery, cardiothoracic surgery, and cardiology jointly recommended conservative management without specific interventions.

By Day 4, the patient's general condition improved, and he was extubated, which allowed him to provide information about his family. However, he exhibited agitation and irritability, prompting consultation with a psychiatrist who opined the absence of psychiatric illness. The patient's overall

condition continued to ameliorate, leading to his discharge on the 8th day post-admission with prescribed medications. Follow-ups were advised at psychiatry, neurosurgery, and cardiothoracic surgery outpatient departments.

Case-III

A twenty-five-year-old male was brought to our Trauma and Emergency Unit during the evening in an ambulance, accompanied by police officers, following an alleged incident of being found unconscious on the roadside. Upon examination, the patient was delirious with a GCS of 11/15, moved all limbs, and exhibited multiple abrasions over his face, right ear and right forearm (Figure 3a), along with bleeding from the left ear and swelling of left leg. No signs of alcohol intoxication were identified. Symptomatic management was initiated, involving intravenous fluids, antibiotics, analgesics, and antacids. An urgent NCCT of the head, chest x-ray, lower extremity x-ray, and E-fast, alongside routine blood investigations
(Table I), were recommended. The Xray of right forearm revealed postero-lateral dislocation of ulna and radius at elbow joint (Figure 3b & 3c).

Figure 3: Photograph 'a' showing chop wound of approximately 6cm x 3 cm size of right forearm; Photograph 'b' & 'c' Xray of right upper extremity showing dislocation of right elbow joint in AP and lateral view respectively; Photograph 'd' NCCT head showing acute haemorrhagic bleed in left temporal and parietal region.

The NCCT head revealed intraparenchymal bleed in the left parietal-temporal region, multiple calvarial fractures and linear minimally displaced fractures of bilateral parietal bones, comminuted minimally displaced fractures of the squamous part of the left temporal bone(Figure 3d). We sought consultations with Neurosurgery, Otorhinology, and Orthopedics.
Throughout his hospital stay, conservative management was employed, including intravenous antibiotics, antiepileptics, analgesics, anti-edema measures, and supportive care. The otorhinologist sutured the wound on the right ear, with a follow-up scheduled after ten days in the Otorhinology OPD. The patient provided information about his family on the fourth day of admission. A psychiatry consultation occurred on day four due to sleep disturbances and agitation, leading to a diagnosis of delirium attributable to head injury. A repeat NCCT on day 7 revealed the resolution of hemorrhagic changes. We advised routine investigations, showing clinical

improvement. A Physical Medicine and Rehabilitation (PMR) opinion was sought for rehabilitation. The patient was discharged on the 11th day of admission with prescribed medications and guidance from Neurosurgery, Otorhinology, Orthopedics, and Psychiatry.

Case-IV

A thirty-year-old male patient was brought to our Trauma and Emergency Unit at midnight by ambulance with a reported history of being hit by a vehicle. On examination, he presented with altered sensorium and a GCS of 10/15, a laceration at the right ear, head injury, and bleeding from the right ear, and was under the influence of alcohol. Initial stabilization involved intravenous fluids, antibiotics, analgesics, and antacids. The patient was promptly intubated, and an urgent NCCT of the head with a whole spine, chest x-ray, PBH x-ray, and E-fast, accompanied by routine blood workup(Table I), was advised. The MSSO was notified immediately.

The chest Xray revealed displaced right clavicular fracture (Figure 4a) and the left leg Xray showed displaced tibial and fibular shaft fracture (Figure 4b). NCCT head showed no significant abnormality (Figure 4c). Consultations with Neurosurgery, Otorhinology, PMR, and Orthopedics were sought. The patient underwent conservative management throughout his hospital stay, with no surgical interventions deemed necessary.

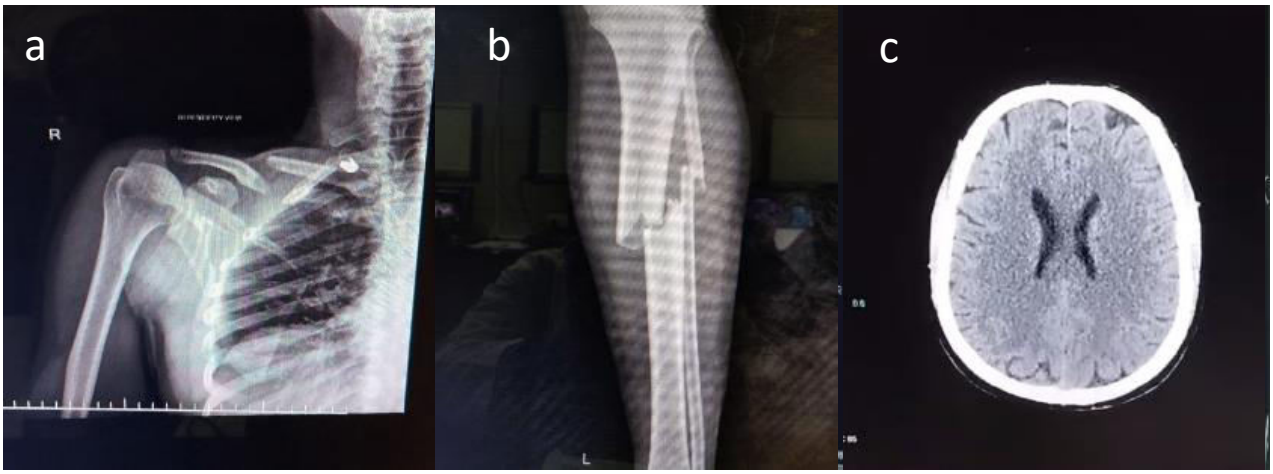

Figure 4. Photograph 'a' Chest Xray in AP view showing right displaced clavicular fracture at junction of medial one third and lateral two third; Photograph 'b' Xray of right leg showing simple, oblique laterally displaced tibial shaft fracture and simple, oblique medially displaced fibular shaft fracture; Photograph 'c' NCCT head with no abnormalities.

The patient's GCS improved to 15/15 after 48 hours of admission, was extubated, and informed family members on day 3. He sustained abrasions on bilateral ears, and regular wound dressings were advised. The pain clinic unit was involved in long-term pain management. After a 21-day hospital stay, he was discharged with proper medications and advice from PMR, Orthopedics, and the pain clinic.

Case-V

A sixty-five-year-old elderly male was admitted to our Trauma and Emergency Medicine Unit in the morning, found in an unconscious state, and brought to the hospital by bystanders. The alleged history suggested a self-fall on the road. On examination, his GCS being 15/15, he had bilateral orbital ecchymosis, swelling, and a 3 * 4 cm lacerated wound at the right supraorbital region, along with a 3 * 2 cm wound in the infraorbital area. Notably, his blood pressure was

elevated at 219/108 mmHg. An urgent non-contrast computed tomography (NCCT) of the head with a whole spine, E-fast, chest x-ray, PBH x-ray, and routine blood investigations (Table I) were promptly advised. Injection Labetalol, Tablet Amlodipine, antacids, and intravenous fluids were administered for immediate management. On further asking, he said that he was not on any medications or illicit drug use and had no episodes of falls in the past and no known medical comorbidities, but he was a chronic tobacco chewer and smoker. He hadn't visited a hospital or doctor in the last 15 years but took over-the-counter medications as needed.

Although conscious, the patient, being homeless and without any financial resources, necessitated the involvement of the MSSO for essential arrangements. Fortunately, the NCCT head, E-fast, X-rays, and blood workup revealed no significant abnormalities. (Figure 5a & 5b) Ophthalmology consultation was sought, leading to suturing and dressing of the wounds.

After a 5-day hospital stay, during which the patient's condition stabilized, he was discharged with prescribed medications. The MSSO facilitated the patient's transition to a more suitable environment, ensuring ongoing care beyond the hospital setting.

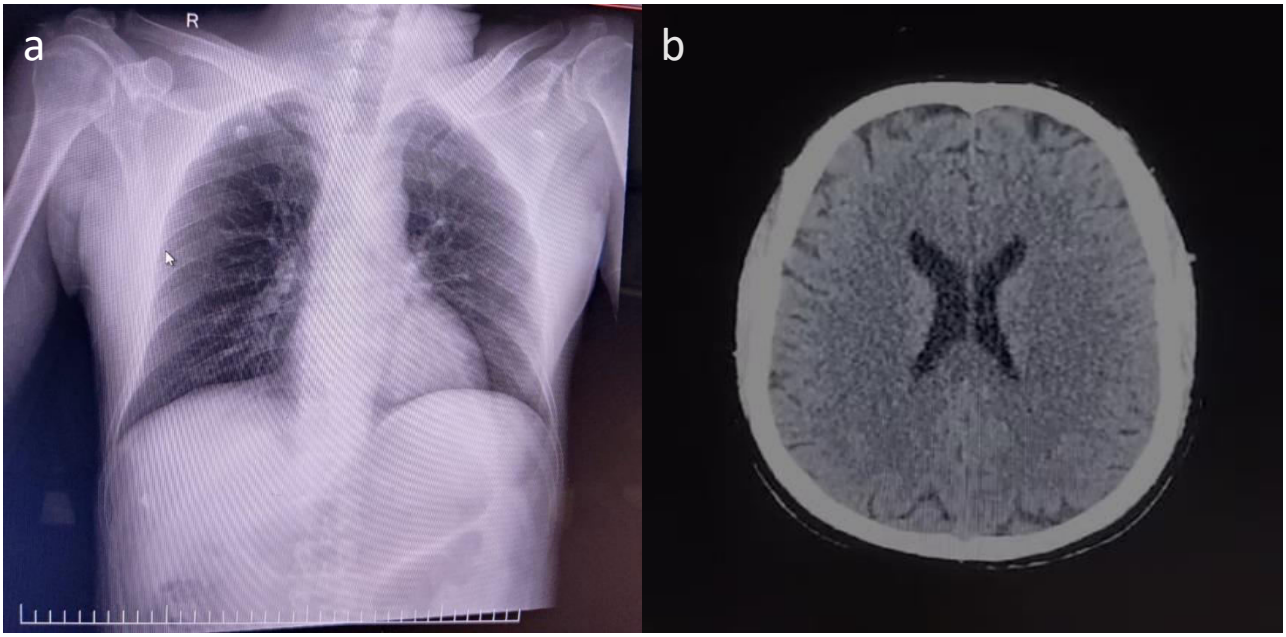

Figure 5: Photograph 'a' chest X ray showing no injuries or fractures; Photograph 'b' NCCT head showing no gross or acute abnormalities.

Our patient treatment process faced no notable legal challenges thanks to our strict adherence to established protocols. However, managing unknown patients presented unique challenges, encompassing unidentified comorbidities during surgery, subsequent patient management, financial constraints, and situations where patients were unable to make decisions due to unconsciousness, alcohol intoxication, and the absence of next of kin. A comparative analysis of various factors among our five cases is detailed in Table II. These complex cases frequently led to extended hospital stays, underscoring the intricacies of providing care to individuals with uncertain medical histories.

DISCUSSION:

Patients with unknown identities pose numerous challenges in their care. Often found unconscious on roads, they are brought to the hospital by police officers or bystanders, who may lack proper training for severe injuries. Their prehospital management is often inadequate, and the lack of

appropriate transfer facilities in ambulances worsens their condition. Many such patients come from peripheral hospitals due to a lack of adequate facilities there. These individuals are frequently destitute, and their injuries are compounded by factors like poor nutrition, medical conditions (e.g., diabetes, hypertension), substance abuse, and mental illnesses. Therefore, it's crucial to approach these patients with a high suspicion for the mentioned conditions. During their hospital stay, the role of paramedical staff is vital. Providing daily nursing care in the absence of relatives is a challenging task. This requires a team of trained and empathetic nursing staff and a physiotherapist, dietitian, psychologist, and social worker to offer support and rehabilitation.

A Canadian study has identified a concerning trend among unidentified patients, revealing a distinctive pattern of high acuity trauma coupled with substance misuse presentations. Notably, these cases are associated with a significantly elevated mortality rate. This underscores the urgency of addressing the unique challenges posed by such issues, emphasizing the critical need for tailored interventions and increased attention to this vulnerable demographic. (5)

Unknown patients with head injuries often receive less attention. Their outcomes are not as good as those with family support. Taking care of these patients, from the ambulance to leaving the hospital, is very challenging. It's essential to find ways to better care for these patients. (6)

The average age of patients was 35 years, with only one over 60. In our study, three out of five patients admitted to the hospital had a head injury as their primary complaint. Four of them were unconscious upon arrival, with only one aware of their identity. A study found that 33% of unknown patients admitted by emergency clinicians were under the influence of drugs/alcohol (5). In contrast, in our study, 75% were under the influence of alcohol, and two were intubated soon after admission.

While most patients often self-identify with time, waiting for improvement in physical or mental status raises risks such as medication errors, diagnostic accuracy issues, and reduced physician efficiency. (7) In our case, all patients self-identified within a median time of 76 hours from admission (Table I)

Most patients were brought to our hospital by bystanders, with only two arriving by ambulance, highlighting ongoing healthcare resource needs, as observed in previous studies. (3,8) The average hospital stay was 9.8 days, with only one patient discharged to a shelter home, while the remaining four returned to their homes.

Given the youthfulness of many patients, there is a favorable outlook for recovery. Many have recalled their addresses and phone numbers, aiding family reunions. Our social workers collaborate with non-governmental organizations to facilitate rehabilitation for those with elusive identities, guiding them to appropriate resources. The success of initiatives like establishing dedicated units hinges on clear roles for stakeholders and meticulous selection of medical and paramedical staff. (9)

In the context of a developing nation, it's crucial to raise public awareness about prehospital trauma care protocols. Including these protocols in school curricula becomes essential for a more informed and responsive community. Raising awareness among the public and police about transporting and managing injured patients is vital. Peripheral hospitals should be well-equipped for treating such cases, with specific funds allocated to care for unidentified patients.

The rising numbers of neglected, destitute, and unknown patients are concerning. Despite the challenges, holistic care is attainable in tertiary care hospitals with a dedicated team, leading to significant recovery for many. Optimal outcomes for unidentified adult patients hinge upon timely and meticulous care, necessitating comprehensive staff training and enhanced resources in the context of our developing nation.

Our case series, comprising five patients, has limitations, including a small sample size and limited generalizability. Additionally, the retrospective nature and variations in patient characteristics may impact our findings' broader applicability.

CONCLUSIONS:

In conclusion, addressing the multifaceted challenges posed by unidentified adult patients demands proactive measures such as comprehensive staff training and improved resources. As a developing nation, heightened public awareness regarding road safety and prehospital trauma care protocols is imperative. Additionally, enhancing overall healthcare delivery, particularly in hospitals, is crucial for optimal outcomes in the care of these individuals.

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Table I. comparison of blood parameters.

	Case-I	Case-II	Case-III	Case-IV	Case-V	Normal Range	Units
Complete Blood count							
Hemoglobin	15	10.8	11.2	13.3	14.6	14-18	gm/dl
Hematocrit	44	35.3	38.4	40.2	44.3	37-47	percentage
White Blood cells	9.93	9.39	8.47	7.77	8.93	4-11	Thousand/Microliter
Platelet count	248	48	198	212	224	150-450	Thousand/Microliter
Liver Function test							

Total Bilirubin	0.67	1.18	0.94	0.76	0.93	0.3-1.2	mg/dl
Direct Bilirubin	0.18	0.31	0.19	0.13	0.24	<0.2	mg/dl
AST	43	28.7	30	16	23	<50	U/L
ALT	46	37	43	24	43	<50	U/L
ALP	85.4	76	89	55	67	30-120	U/L
Renal Function test							
Serum Creatinine	1.04	0.67	0.7	0.73	1.45	0.6-1.2	mg/dl
Blood Urea	19.89	23.8	17.43	19.31	23.36	20-40	mg/dl
Random Blood Sugar	132	136	118			70-140	mg/dl

TABLE II. Comparison of various parameters of the patients.

Age (years)	Sex	Mental status at admission	Family informed	Duration of hospital stay	Intubation needed	Alcohol influence	Surgical intervention done
20	Male	Unconscious	Yes (after 6 hours of admission)	4 days	No	Present	None
30	Male	Drowsy	Yes (on 4th day of admission)	8 days	Yes	Present	None
25	Male	Delirious	Yes (on 4th day of admission)	11 days	No	Absent	None
35	Male	Drowsy	Yes (on day 3rd of admission)	21 days	Yes	Present	None
65	Male	Conscious	No (Homeless)	5 days	No	Absent	None