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Article

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When the disease is known but the patient is not. Outcome of 118 such patients at a Tertiary Care Centre

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Abstract: This is a prospective study, carried out at the Department of Neurosurgery at M.B.G Hospital, R.N.T Medical College, Udaipur, Rajasthan (India). Many patients with history of trauma with head injury, whose identity cannot be ascertained, are admitted in our hospital. The management of these unattended patients from pre-hospital till discharge, rehabilitation or death is full of difficulties especially when surgical intervention has to be done. From March 16, 2015, until March 30, 2016, 118 consecutive patients unattended patients admitted in our department with history of head injury were enrolled in the study. Out of 118 patients, 107 (91%) were male, most were in the age group of 30-39 years. In majority of patients, 115 (97%) principal cause of head injury was road traffic accident. Majority of the patients 49 (41%) had Glasgow coma scale >13 on admission. Twenty three patients 23 (20%) died in hospital, 71 (60%) patients had good recovery. During the course of treatment identity of 115 patients was established and 92 (78%) patients, who survived were discharged to home. Three (3%) patients were shifted to destitute home. All discharged patients were followed at 1 month and 6 month interval. 78 (82%) & 76 (80%) patients showed good recovery (GOS) at 1 month & 6 month respectively. One patient expired at home within one month of discharge and 6 patients lost to follow up at 6 months.

Key words: anonymous patient; head Injury; nameless patient; outcome; unknown patients; unidentified patient

Introduction

The total number of deaths in road accidents in India was 169107 during 2014 (1). The incidence of road traffic accident in Rajasthan in 2014 was 24639 and out of which the total number of deaths in road accidents in

Rajasthan was 10287 during 2014 (1), which was 6.08% of the total number of deaths in road accidents in India during the year1. In India, the incidence of head injury is steadily increasing with urbanization and increasing number of vehicular population (2). Among

the road traffic accidents 70% have head injury, among road accident deaths 70% are due to head injury. Majority of deaths occur during first 72 hours. Recently, number of fatal accidents has increased in India. Every minute there is an accident and every eight minute there is a death (3). Attempts to systematize care of patients with severe TBI have culminated in evidence-based guidelines issued by the joint task force between the Brain Trauma Foundation and the American Association of Neurological Surgeons (4,5). Our institute which is a tertiary care centre of a developing country and a lot of severe head injury patients are being referred to us. Many such patients are often brought by policemen and bystanders and their identities are not known at the time of admission. These patients present a unique challenge in management. In this backdrop we prospectively studied demography, mode of injury, presentation, treatment, outcome and factors affecting outcome in this group of patients.

Methodology

This was a prospective study, conducted at Department of Neurosurgery, Maharana Bhupal Government Hospital, RNT Medical College, Udaipur, Rajasthan. From March 16, 2015, until March 30, 2016, 118 consecutive patients unattended patients admitted in our department with history of head injury were enrolled in the study. Note was made regarding demography, mode of injury, clinical presentation, and condition at admission, treatment given, hospital stay and outcome of the patients. All patients were

clinically evaluated by a team comprising of doctors from surgical, medical and orthopaedics specialties in the emergency department and subsequently admitted and treated in neurosurgery unit. Plain CT scan head along with other imaging (if needed) like X-rays, CT scan of spine, USG abdomen, MRI spine or contrast CT (abdomen chest) were carried out to rule out other injuries.

Results

Out of 118 patients, 107 (91%) were male, and 11 (09%) were female (Table 1). Only one patient was less than 20 yrs of age, while the most patients 46 (39%) were in the age group of 30-39 years. 12 (10%) patients were > 60 years of age group (Table 2). Road traffic accident was the major cause of injury in 115 (97%) cases.

At the time of admission Glasgow Coma Scale (GCS) score of less than 8 was seen in 33 (28%) cases. GCS of 8-12 was seen in 36 (31%) cases. Plain CT scan of head revealed EDH in 12 (10%) patients, 28 (24 %) had SDH, 20 (17%) had cerebral contusions, 09 (08%) had SAH, 04 (03%) had diffuse axonal injury, 01 (01%) patient had depressed fracture while in 44 (37%) patients no abnormality was found on imaging (Table 3). Associated injuries were seen in total 64 (54%) patients. 30 patients (25%) had chest injury, 12 (10%) had limb fractures, 20 (17%) had maxillofacial injuries and only two had abdominal injuries.

Only 11 patients needed neurosurgical intervention where decompressive craniectomy was carried out in 6 (5%), craniotomy was in 4 patients (3%), 1 patient (1%) underwent depressed fracture elevation

(Table 4). During treatment, 20 patients (17%) had chest complications, 9 (8%) had wound infection, 4 patients developed meningitis (Table 5). At the time of discharge, 81 patients (68%) had GCS of 13-15 and eight (07 %) had GCS score 12-8, only 4 patients had GCS less than 8 at time of discharge. According to Glasgow outcome scale (GOS) of these patients, 71 (60%) had good recovery, 11 (09%) had moderate disability, 8 (07%) had severe disability, 05 (04%) remained vegetative and 23 (20%) died during treatment. During

the course of treatment identity of 110 (93%) patients could be identified and 92 (78%) patients who survived were sent home with relatives, 3 (03%) patients who remained unidentified were sent to destitute home. All patients who were discharged followed at 1 month and 6 month intervals. 78 (82%) & 76 (81%) patients showed good recovery (GOS) at 1 month & 6 month respectively, 1 patient died at home. 6 of the discharged patients lost to follow up at 6 months.

TABLE 1

Demography (gender wise) of head injury in unknown patients admitted in neurosurgery: (N=118)

| Demography (Gender) | No. of patients(n-118) | Percentage |
|----------------------------|-------------------------------|-------------------|
| Male | 107 | 91 |
| Female | 11 | 9 |
| Total | 118 | 100 |

TABLE 2

Demography of head injury in unknown patients admitted in neurosurgery: (N=118)

| Demography | No. of patients(n-118) | Percentage |
|-------------------|-------------------------------|-------------------|
| Mean age(years) | | |
| Age group | | |
| <20 | 1 | 1 |
| 20-29 | 28 | 23 |
| 30-39 | 46 | 39 |
| 40-49 | 22 | 19 |
| 50-59 | 9 | 8 |
| >60 | 12 | 10 |
| Total | 118 | 100 |

TABLE 3

Clinical characteristic and type of lesions in head injury of unknown patients: (N=118)

| Cause of head injury | Number of patients (118) | Percentage |
|---|---------------------------------|-------------------|
| Road traffic accident | 115 | 97 |
| Other (FALL from train) | 3 | 3 |
| Glasgow coma scale at admission | | |
| 13-15 | 49 | 41 |
| 12-8 | 36 | 31 |
| <8 | 33 | 28 |
| Type of brain injury (major component) | | |
| Extradural haematoma (EDH) | 12 | 10 |
| Subdural haematoma(SDH) | 28 | 24 |
| Cerebral contusion | 20 | 17 |
| Depressed fracture | 01 | 01 |
| Diffuse axonal injury(DAI) | 04 | 03 |
| Subarachnoid haemorrhage(SAH) | 09 | 08 |
| No observable abnormality on imaging | 44 | 37 |
| Other injuries | | |
| - Chest injury | 30 | 25 |
| - Abdominal injury | 02 | 02 |
| - Limb fracture | 12 | 10 |
| - Maxillofacial | 20 | 17 |
| Other emergency surgical speciality procedure | ICD insertion in 20 patients | 17 |

TABLE 4

Surgical Procedures Performed (N=11)

| Types of treatment/ Surgery | No. of patients (11 of 118) | Percentage |
|------------------------------------|------------------------------------|-------------------|
| Decompressive Craniectomy | 6 | 05 |
| Craniotomy | 4 | 03 |
| Depressed fracture elevation | 1 | 01 |
| Burr hole evacuation | - | - |
| Total | 11 | 09 |

TABLE 5
Complications during treatment of the patients (N-118)

| Complications | No. of patients | Percentage |
|-------------------|-----------------|------------|
| - Pneumonia | 20 | 17 |
| - Meningitis | 04 | 03 |
| - Septicemia | - | - |
| - Wound infection | 09 | 08 |
| - CSF leak | - | - |
| - Hydrocephalus | - | - |
| Total | 33 | 28 |

TABLE 6
Outcome and destination of patients during discharge (N=118)

| Outcome | No. of patients (118) | Percentage |
|--|-----------------------|------------|
| Glasgow outcome scale | | |
| Good recovery | 71 | 60 |
| Moderate disability | 11 | 09 |
| Severe disability | 08 | 07 |
| Vegetative state | 05 | 04 |
| Death | 23 | 20 |
| Glasgow Coma scale at discharge | | |
| 13-15 | 81 | 68 |
| 8-12 | 08 | 07 |
| < 8 | 04 | 03 |
| Discharged location | | |
| Home | 92 | 78 |
| Destitute Home | 03 | 03 |

TABLE 7
Outcome during follow up of patients after discharge (N-95)

| Outcome (Glasgow outcome scale) | After 1 month N=95 | After 6 month N=94 |
|---------------------------------|-----------------------|-----------------------|
| Good recovery | 78 | 76 |
| Moderate disability | 05 | 04 |
| Severe disability | 07 | 04 |
| Vegetative state | 04 | 04 |
| Death | 01 | 00 |
| Lost to follow | 0 | 06 |

Discussion

In a study by Ahmad et al (6), out of 325 unidentified patients, there were 9 (3%) patients in the paediatric age group and 16 (5%) patients were above 60 years of age. Of these, 193 (65%) could be identified during the hospital stay. An additional 40 (13%) patients were sent home after they regained memory of their addresses. Forty seven patients (15%) died without their identities being established. Seventeen (6%) patients remained unknown and were sent to rehabilitation/poor homes with the help medical social worker: All pediatric patients were identified (6).

In study of 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 hematomas⁷. Mortality following head injury has been reported to be in the range of 39-51% (8, 9).

Study by Liew BS et al. showed both known and unknown head injury patients, among 72 patients of head injury eleven patients (15%) died during hospitalization. There were only sixty one (85%) patients were discharged from hospital, where by twenty nine (40%) with good outcome (GOS 4 and 5) while the remaining thirty two (44%) patients were with either severe disability or vegetative state. Only one patient continued to suffer severe disability, while the rest had moderate or good recovery (10). In another study there were twelve patients (17%) under the age of twenty years, only 5 patients (7%) were above 60 years. Twenty patients (29%) were treated by

surgery, most often for cerebral contusion (33 patients, 47%) (11).

Till date no prospective study has been conducted to assess outcome of such unidentified patients who underwent neurosurgical procedures. In our study 118 patients were treated of which 11 patients needed surgical intervention where decompressive craniectomy was carried out in 6 (54%), craniotomy was in 4 (37%), One patient (9%) underwent depressed fracture elevation. Remaining 107 (91%) patients were treated conservatively. Among these patients, 71 patients (60%) had good recovery, 11 patients (9%) had moderate disability, 8 patients (7%) had severe disability, 5 patients (4%) remained vegetative and 23 patients (20%) died during treatment. During the course of treatment identity of 110 (93%) patients could be identified and 92 (78%) patients who survived were sent home with relatives, 3 (3%) patients who remained unidentified were sent to destitute home.

These unidentified patients with unknown identities present considerable challenges in their management. They are usually found lying on road in unconscious state and brought to hospital by policemen or bypassers who are ill equipped and often ignorant in handling patients with severe injuries. Their prehospital management is usually improper and lack of proper transfer facilities, in ambulances, further aggravates their condition. We receive many such patients from peripheral hospitals, because of lack of proper facilities there. 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 a very 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 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. Performing neurosurgical procedures in such patients is not devoid of difficulties ranging from consent to rehabilitation. Existing infrastructure and much trained staff, enthusiastic multidisciplinary team, social workers and media personnel help many unidentified patients with severe head injury in rehabilitation. It is highly gratifying for the treating team to see such patients return back to our outpatient department with their relatives. We believe that there is an urgent need to sensitize the general public and police about the transportation and prehospital management of such severe head injury patients. Our peripheral hospitals need to be well equipped for treatment of such patients. 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. The role of social media and general media also has a capacitive role in spreading awareness and rehabilitating unidentified patients.

Conclusion

Management of unidentified head injury patients are posed with challenges. Like other patients initial management is of vital importance. Outcome of these patients is comparable to patients who are accompanied by their relatives. Their management from prehospital to treatment and discharge from hospital is quite challenging especially, when patient requires operative interventions, in ICU and meeting nutritional standards. There mean hospital stay and ICU stay is sometimes longer in comparison to similar patients as they may remain unidentified. They need special care for which staff should be well trained and hospital must have economic resources. Hospital should have a protocol system to deal with such patients especially when they require neurosurgical interventions. A good network of social workers and active involvement of media helps in identification and rehabilitation of these patients.

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