



ASSESSMENT OF THE INITIAL TRAUMA EMERGENCY MANAGEMENT IN THE TERTIARY CARE HOSPITAL

¹RISHABH KUMAR JAIN, ²DR.SINDHU THOMAS, ³DR.SAGAR SINHA

¹MSC. NURSES PRACTITIONER IN CRITICAL CARE, ²ASSISSTANT PROFESSOR, ³ASSOCIATE PROFFESOR OF
EMERGENCY DEPARTMENT

¹NURSING,

¹MGM NEW BOMBAY COLLEGE OF NURSING , NAVI MUMBAI, INDIA

Abstract: .

Introduction

Trauma is a quite common cause of increased mortality and life-threatening conditions. According to WHO, by 2030, trauma will be the fifth leading cause of death worldwide. Trauma can be caused by a variety of factors, such as rash driving, talking on the phone while driving, and working in an unsafe and unprotective environment. Trauma victims require immediate resuscitation and early trauma detection to improve their chances of survival. Trauma initial evaluation is useful for assessing the patient, determining the patient's needs, and monitoring bio-physiological parameters that aid in the prevention of bleeding or missing injuries

Methodology

A descriptive quantitative observational design is used in this study, and a non-probability purposive sampling technique is used to validate the initial trauma tool. 90 samples were drawn from the emergency department of a specific hospital.

Results

According to this study, 52.2 percent of polytrauma patients are between the ages of 18 and 38. There is an increase in the incidence of trauma in males (81.1 percent), as well as an increase in the number of road traffic accidents (81.1 percent) and Patients with head trauma accounted for 70%. All polytraumatic patients requiring Orthopedic and Neurologic consultation.

Conclusion

Through the primary and secondary survey, the initial trauma assessment tool can help to quickly identify the attention to injury and immediate resuscitation of the patient and help to make decisions in the triaging. After using this tool on the patient, the mortality rate before the patient's disposition has decreased.

Keywords: Polytrauma, initial assessment, resuscitation, mortality

1 INTRODUCTION

Trauma is one of the major consequences of accidents which is quite common and unexpected among mankind irrespective of their age, place of action or time¹. These accidents can compromise the existence of life of a person even to the death. Globally, among the various reasons of death, trauma stands as the sixth leading cause and scored the fifth rank to create disabilities in varying degrees. On analyzing the various reasons of trauma, road traffic accidents are found to be the significant cause which is predicted as the fifth leading cause of death worldwide by 2030 according to the World Health Organization reports². These multiple injuries can lead to significant disability that can lead to reduced chance of returning to work and thereby impact the quality of life of an individual. If the victim of the trauma is elderly, the risk of death is doubled due to medical comorbidities and devitalizing complications that can be developed due to prolonged hospitalisation³. Since trauma is a common injury in all the age group and its immediate assessment and management plays an important role for revival of the patient, the researcher is looking into initial emergency management of trauma with a developed tool so that patients can be diagnosed better for immediate management.

1.2 Population and Sample

In this study population is all the trauma patients present in Emergency department of selected hospital and population was the trauma patient above the age of 18 years.

Sample size : It is the number of people who are included in study

A sample size of 90 was selected for the study

2 Data and Sources of Data

In this study Non probability purposive sampling technique was used in the study select the sample based on inclusion and exclusion criteria and this process is continued until 90 representative samples were collected.

3 RESEARCH METHODOLOGY

A descriptive design was adopted to assess the initial trauma emergency management in the tertiary care hospital and biophysiological method was used for data collection

Statistical analysis

The software used in the analysis were SPSS 24.0 and Graph Pad Prism 7.0 version and $p < 0.05$ is considered as level of significance.

The statistical tests used for the analysis of the result were:

- Frequency and percentage

4 RESULTS AND DISCUSSION

I. Analysis of Biophysiological Parameter Measurement of Traumatic Patients

Table 2: Distribution of Samples Based on Biophysiological parameters n=90

Biophysiological Parameters	f	%
Airway		
Patent	58	64.4
Suctioning	36	40
Jaw thrust	6	6.7
Oropharyngeal Airway	8	8.9
Cervical collar	27	30
History of		
Vomiting	19	21.1
Seizure	4	4.4
Amnesia of event	8	8.9
Loss of consciousness	30	33.3
ENT bleed	21	23.3
Intubate		
Yes	31	34.4
No	59	65.5
Airway Entry		
Equal	87	96.3

Diminished	3	3.33
Head To Toe Examination- Injuries Involved		
Head	63	70
Face	54	60
Ent	19	21.1
Eye	19	21.1
Neck	46	51.1
Chest	10	11.1
Pelvis		
Stable	86	95.6
Unstable	4	4.4
Upper limb	43	47.8
Lower limb	48	53.3
Back and spine	14	15.6
Focused Examination		
Neuro examination	90	100
Abdominal examination	72	80
Vascular examination	11	12.2
Investigation; E- fast		
Positive	15	16.7
Negative	75	83.3
References & Consultation		
Neurosurgery	79	87.8
Orthopedic	81	90
General surgery	11	12.2

Table 2 gives a detailed explanation on initial assessment, detailed physical examination and further references of the samples for better management.

Airway is the first aspect to be addressed in resuscitation. Patency of samples was checked and found with 64.4% of patent airway. 8.9% of the samples were on oropharyngeal airway and 34.4% were intubated. 96.3% had air entry bilaterally equal.

History of the samples were collected and recorded where the samples had more than one presenting symptoms. Most of the casualties (33.3%) were presented in Emergency department with Loss of Consciousness.

A detailed head to toe examination was conducted and found that 70% of the casualties presented with injuries on the head where 60% of the cases involved with facial wounds.

Pelvic injuries are classified into stable and unstable pelvic injuries. Stable one excludes all fractures which compressed of 95.6%.

Most of the casualties had injuries on the extremities especially on lower limbs that comprises of 53.3%. Yet, 47.8% had injuries and trauma on upper limbs.

Irrespective of the involvement of any parts of the body, all samples were undergone neurological examination in order to avoid any missed injuries. 80% of them underwent focused abdominal examination and 12.2% went through vascular examinations.

In this study, majority (83.3%) came up with negative results with E-fast that indicated no abdominal internal injuries. Most of them (90%) had Orthopedic reference and 87.8% had neuro surgery references.

5 Discussion

- Airway is the first aspect to be addressed in resuscitation. Patency of samples was checked and found with 64.4% of patent airway. 8.9% of the samples were on oropharyngeal airway and 34.4% were intubated. However, 40% of the samples needed suctioning irrespective of their intubation status. Some of the samples (6.7%) were used with Jaw thrust method for the management of obstructive airway. 30% cases were kept on cervical collar in suspicion of cervical injury. 96.3% had air entry bilaterally equal.
- History of the samples were collected and recorded where the samples had more than one presenting symptoms. Most of the casualties (33.3%) were presented in Emergency department with Loss of Consciousness. Almost all of them had ENT bleed (23.3%), vomiting with 21.1% amnesia of event (8.9%) and seizures (4.4%).

- A detailed head to toe examination was conducted and found that 70% of the casualties presented with injuries on the head where 60% of the cases involved with facial wounds. The involvement of Eye and ENT were found to be similar in percentage (21.1%). More than half (51.1%) had neck involvement that included abrasions, bleeding along with spinal injuries. Similarly, 11.1% had injuries in the chest that included abrasions, barotrauma and pneumothorax
- Pelvic injuries are classified into stable and unstable pelvic injuries. Stable one excludes all fractures which compressed of 95.6%.
- Most of the casualties had injuries on the extremities especially on lower limbs that comprises of 53.3%. Yet, 47.8% had injuries and trauma on upper limbs.
- However, 15.6% of the samples had injuries related to back and spine.
- Irrespective of the involvement of any parts of the body, all samples were undergone neurological examination in order to avoid any missed injuries. 80% of them underwent focused abdominal examination and 12.2% went through vascular examinations.
- Extended Focused Assessment with Sonography for Trauma (E-Fast) was used for trauma patients who have suspected abdominal injuries. In the selected setting E-fast is a mandatory investigation for all polytrauma patients along with CT, Chest Xray and Pelvic and Both Hip. In this study, majority (83.3%) came up with negative results with E-fast that indicated no abdominal internal injuries.
- Most of them (90%) had Orthopedic reference and 87.8% had neuro surgery references. Quite a few (12.2%) had general surgery references.

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