FACTORS ASSOCIATED WITH FUNCTIONAL OUTCOME IN PATIENTS WITH TRAUMATIC BRAIN INJURIES AT THIKA LEVEL V HOSPITAL IN KIAMBU COUNTY, KENYA

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DEFINITION OF TERMS

Traumatic brain injury patient: A person who has undergone an external mechanical force leading to permanent or temporary impairment of cognitive, physical and psychosocial function with an associated diminished or altered state of consciousness.

BACKGROUND INFORMATION

Traumatic brain injury is a neurosurgical emergence that is a significant cause of disability, morbidity and mortality and one of the main causes of admissions due to trauma in hospitals. The aim of this study was to identify the epidemiology and factors associated with functional recovery in traumatic brain injury patients in urban hospitals.

RESEARCH OBJECTIVES

To determine factors associated with functional outcome of Traumatic brain injury patients in Thika level 5 Hospital and Mama Lucy Kibaki Hospital.

STUDY METHODOLOGY

Site: Thika Level V Hospital, Accident and Emergency department, intensive care unit and the surgical wards

Design: Descriptive Cross sectional study

Population: 95, Total population of patients seen in a month at recruitment areas

Data Collection: A questionnaire was used to collect data which consisted of both open ended and closed ended questions. Pre-test was done using 10 patients at Thika level 5 Hospital in the surgical ward.

Sample size: 60 patients.

RESULTS

I) SOCIO-ECONOMIC CHARACTERISTICS

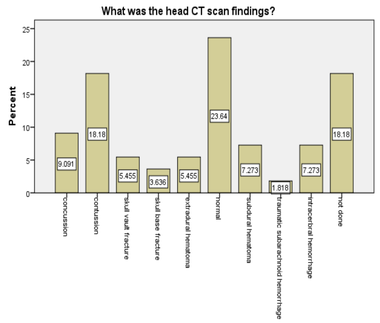
		frequency	percentage %
age of respondent	0-5	0	0%
	6-10	1	2%
	11-15	3	5%
	16-20	8	15%
	21-25	12	22%
	26-30	7	13%
	31-35	6	11%
	36-40	7	13%
	41-45	4	7%
	46-50	1	2%
	51-55	1	2%
	56-60	2	4%
	61-65	2	4%
	above 65	1	2%
sex of respondent	male	46	84%
	female	9	16%
	other	0	0%
How far is the nearest healthcare facility from the place of injury? (kilometers)	0-10	32	58%
	11-20	21	38%
	21-30	2	4%
	above 30	0	0%
Time lapse between trauma and arrival at casualty department.	less than 1 hour	11	20%
	1-2 hours	30	55%
	3-4 hours	10	18%
	5 or more hours	4	7%
How did you come to sustain an injury to the head?	fall from height	6	11%
	assault	8	15%
	suicide attempt	0	0%
	sports related accident	0	0%
	road traffic accident	39	71%
	other	2	4%
How long did it take after CT scan report before you received surgical care?	one hour	2	4%
	one day	37	67%
	more than one day	5	9%
	CT head not done	11	20%
How long did/ have you stayed in the hospital since the time of injury?	< 10 days	33	60%
	10-20 days	17	31%
	21-30 days	4	7%
	> 30 days	1	2%

The respondents ages ranged from 6-70 years. The majority ranged between 21-25 years (22%), followed by 16-20 years (15%). 26-30 years and 36-40 years were at 13%. The age ranges 6-10, 46-50, 51-55 and above 65 years tied at 2%.

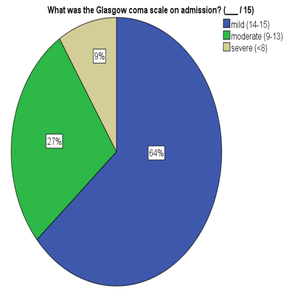
II) CLINICAL CHARACTERISTICS

Admission GCS, head CT scan findings and associated factors.

		frequency	percentage %
What was the Glasgow coma scale on admission? (___ / 15)	mild (14-15)	35	64%
	moderate (9-13)	15	27%
	severe (<8)	5	9%
What was the head CT scan findings?	concussion	5	9%
	contusion	10	18%
	skull vault fracture	3	5%
	skull base fracture	2	4%
	extradural hematoma	3	5%
	normal	13	24%
	subdural hematoma	4	7%
	traumatic subarachnoid hemorrhage	1	2%
	intracerebral hemorrhage	4	7%
	not done	11	20%
Battle sign and/ or racoon eyes? (eye witness)	yes	7	13%
	no	48	87%
Cerebral spinal fluid leakage? (eye witness)	from the ear	1	2%
	from the nose	0	0%
	no leakage	54	98%
Was there injury sustained in other body regions apart from the head?	no	9	16%
	maxillofacial trauma	11	20%
	chest trauma	5	9%
	abdominal trauma	3	5%
	spine trauma	1	2%
	limb trauma	17	31%
	frictional rub	9	16%
Neurological status at the time of injury? (eye witness)	conscious	15	27%
	unconscious	8	15%
	unknown	32	58%



The neurological status at the time of injury was unknown in 58% of the respondents, 27% were conscious and only 15 % were unconscious. The GCS score on admission was mild head injury in the majority (64%), 27% had a moderate score and 9% had a GCS score indicative of severe head injury.



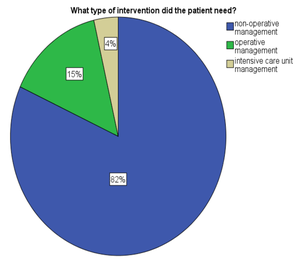
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III) OUTCOMES

		frequency	percentage %
What type of intervention did the patient need?	non-operative management	45	82%
	operative management	8	15%
	intensive care unit management	2	4%
What is the patient's Glasgow outcome score?	1 - dead	1	2%
	2 - persistent vegetative state	0	0%
	3 - severe disability	1	2%
	4 - moderate disability	6	11%
	5 - good recovery	47	85%

Majority of the patients (82%) had a non-operative management, 15% had an operative management and only 4% needed intensive care unit management.

Glasgow outcome score was done at the time of discharge or after the seventh day of admission. 85% of the respondents had a good recovery, 11% had a moderate disability and 2% had severe disability with only 2% dying.



CONCLUSION

Cause of injury, having associated injuries, low admission Glasgow Coma Scale and unconscious neurological status at the time of injury were significantly associated with poor functional outcome. Traumatic head injury is a frequent cause of admission of patients requiring neuro-intensive management, Patients with low admission GCS should be promptly managed and monitored closely as they are likely to have a poor functional outcome.