

**An audit of patients with moderate to severe head injuries
in Leratong regional hospital**

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I, Jane Sikundla, student number 346049

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30 April 2012

Dedicated to:

My mother Rachel

And

My husband Lucas for their support.

ABSTRACT

The aim of this study was to review the clinical presentation, underlying brain injury and clinical outcomes of moderate and severe traumatic brain injuries (TBI) patients managed in a regional hospital setting.

The records of 95 patients with moderate and severe traumatic brain injury who were treated at Leratong hospital from 01 January to 31 December 2009 were studied. Demographic data, referral criteria to neurosurgeon, criteria for computerized tomography (CT) scan and their findings were reviewed. Outcomes were death, alive with and without complication/ disability. The relationships between outcomes, age, blood pressure, pulse, Glasgow coma scales (GCS) score, abnormal pupil and CT scan findings were analyzed.

The following variables were statistically significant in showing a strong association with mortality; subdural haematoma (46%), lower GCS (5.8 ± 2.7), bradycardia (76.4 ± 29.7) and abnormal pupil characteristics (54%). All patients with perforating gunshot wounds to head died. However, 88% patients with brain contusions lived. Patients with a lower GCS (7.3 ± 3.3), hypotension (69.1 ± 25.7) and contusion (48%) had a strong association with development of complications and disability. In contrast, those with facial fractures (92%) were less likely to develop complications or die. Computerized tomography (CT) scan referrals had a poor outcome as result of delays in transfer. Moderate TBI patients treated in this setting did not experience a higher mortality when compared to figures in the literature. It was found that majority of patients (95%) required conservative management instead of craniotomies. Taking into account 46% of missing records regional hospitals might be appropriate facilities for triaging and a supervised conservative management of TBI. However, a need arise to review

triage criteria to neurosurgeon while being specific to our South African hospital setting. Lastly, a conduction of a multicenter prospective study in regional hospitals will enable a more comprehensive understanding of head trauma at this level of care.

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GLOSSARY

Tertiary / quaternary hospitals: are teaching hospitals, the service level package allows for major disciplines (surgery, medicine, paediatrics, obstetrics and gynaecology) and the sub-specialities (e.g. neurosurgery).

Regional hospital: service level package consists of major disciplines.

District hospital: service level package allows for family medicine.

Priority 1 patient: Patient who requires immediate life saving treatment.

Priority 2 patient: Patient who requires urgent attention.

Priority 3 patient: Patient with minor injuries.

Priority 4 patient: Dead patient.

ABBREVIATIONS

ATLS®: Advanced trauma life support

CCRH: Canadian Computerized tomography Head Rule

CD4: Cluster of differentiation 4

CNS: Central nervous system

CT: Computerized tomography

DOI: Date of injury

ED: Emergency department

EDH: Extradural haematoma

ENT: Ear, nose and throat

ET: Endotracheal intubation

GCS: Glasgow coma scale

ICP: Intracranial pressure

ICU: Intensive care unit

IPH: Intraparenchymal haemorrhage

IVH: Intraventricular haemorrhage

MBA: Motorbike accident

MCA: Motorcyclist accident

MVA: Motor vehicle accident

NICE: National Institute for Clinical Excellence

NOC: New Orleans criteria

OP: Oropharyngeal tube

PVA: Pedestrian vehicle accident

RSI: Rapid sequence intubation

SAFE: Saline versus albumin fluid evaluation

SAH: Subarachnoid haemorrhage

SD: Standard deviation

SDH: Subdural haematoma

TBI: Traumatic brain injury

TOIA: Time of initial assessment