

# Rehabilitation in Conflict

## AQUIRED BRAIN INJURY



## What we will cover:

- Management in Humanitarian Settings
- Common Complications
- Adapted Clinical practice

# Quick Overview

- Often enormous confusion, particularly in data, between head injury (such as simple lacerations) and brain injury.
- Mild-moderate injuries may be missed due to focus on other **polytrauma**.
- Low likelihood of severe traumatic brain injury cases surviving extraction/evacuation in large scale disasters
- Limited access to ventilators in humanitarian context exacerbates this
- Limited access to specialists – e.g. Sub Saharan Africa (Excl South Africa), 81 neurosurgeons for 515 million inhabitants; v USA 3,500 neurosurgeons for 299million.
- Likely that we see an increase in CVAs following disasters (e.g. Mateen et al 2010).
- Those working in conflict situations may see a significantly higher number due to penetrating trauma and blast injury.

# Acquired Brain Injury in emergencies

Traumatic caused by:

- Direct trauma to the head

Mechanism include:

- Blast wave
- Fall
- Crush injury
- RTC (non-humanitarian incidence accounts for 50% of HI)
- Assault

Non- Traumatic:

- Stroke (haemorrhagic/embolic)
- Hypoxia
- Encephalitis
- Cerebral malaria
- Meningitis
- Infection / Brain abscess
- Other less common tropical diseases can lead to symptoms similar to acquired brain injury

**TABLE 38-2****Glasgow Coma Scale**

BEHAVIOR	RESPONSE	SCORE
Eye opening response	Spontaneously	4
	To speech	3
	To pain	2
	No response	1
Best verbal response	Oriented to time, place, and person	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	No response	1
Best motor response	Obeys commands	6
	Moves to localized pain	5
	Flexion withdrawal from pain	4
	Abnormal flexion (decorticate)	3
	Abnormal extension (decerebrate)	2
	No response	1
Total score:	<i>Best response</i>	15
	<i>Comatose client</i>	8 or less
	<i>Totally unresponsive</i>	3

# Definition and classification of TBI (poor correlation with functional outcome)

## Glasgow Coma Scale

GCS	<8	Severe	5 %
	9-12	Moderate	10 %
	13-15	Mild	85 %

or LOC/Length of Post Traumatic Amnesia:

	Loss of consciousness	Post traumatic amnesia
Minor brain injury	< 15 mins	< 1 hour
Moderate brain injury	15 mins - 6 hours	1 hour - 24 hours
Severe brain injury	6 hours - 48 hours	24 hours - 7 days
Very severe brain injury	> 48 hours	> 7 days

# Adapted Medical Management

The aim of any ABI management is to minimise the damage arising from secondary complications. Optimal management in a field hospital environment involves:

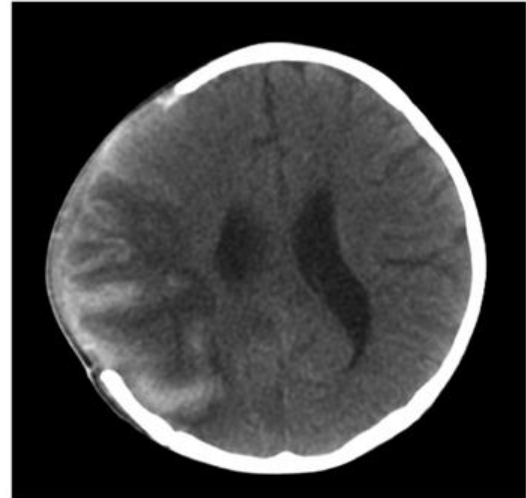
- Control of cerebral perfusion as able (by maintaining blood pressure within normal limits)
- Oxygenation
- Temperature regulation
- Hydration and nutrition
- Prevention of infection
- Optimise Positioning if raised ICP is suspected— head up 30-60 degrees (If cleared cervical spine).
- Reduce stress / agitation (pain)

# Non-specialised Neurosurgical management

- Burr Hole
- Craniotomy
- Decompressive craniectomy

What you are unlikely to see in low resource settings:

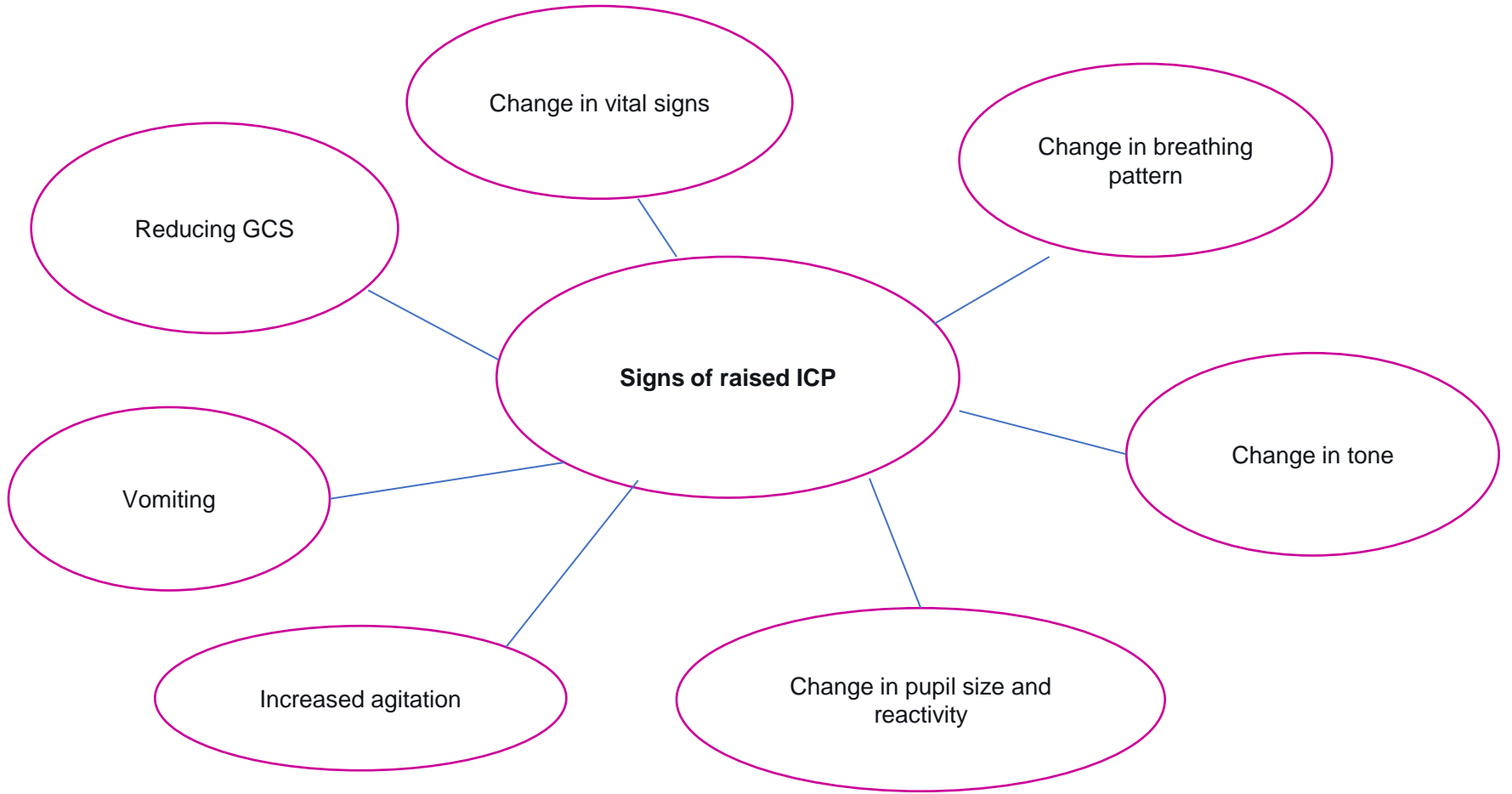
- ICP bolt
- External Ventricular Drain
- Shunt
- Ventriculostomy
- Clipping or coiling of aneurysm





# Complications

- Raised ICP
- Infection (for open injuries)
- Behavioural and emotional changes
- Speech and Swallow problems



# Signs and Symptoms of TBI of concern Deteriorating: (48-72 hours)

- Increased drowsiness (feeling sleepy when normally would be awake)
- GCS: Sustained drop of GCS
- Altered respiratory pattern / signs of aspiration
- Problems with eyesight / double vision / photophobia / nystagmus
- Deteriorating unremitting/ headache significantly worse in mornings
- Vomiting (being sick)
- Seizures (also known as convulsions or fits)
- CSF leak
- Double incontinence
- Onset / worsening of neurological deficit:
  - Weakness of one or more limbs (pronator drift)
  - Communication problems (difficulty with speech or comprehension)
  - Behavioural / cognitive changes
  - Changes in size / reactivity of pupils , failure of upward gaze
  - Changes in CVS / Respiratory status: HR / BP / RR
  - Loss of balance / co-ordination, or problems walking

# Adapted Clinical Practice

- The aim of any treatment should be to allow the patient to achieve their maximum potential
- Mild-Moderate TBI may only need advice (including on what to do if they deteriorate)
- Severe TBI need specialist rehabilitation where possible – but early rehabilitation still possible in any setting
- Need to consider areas such as cognition, behaviour, mood and speech and swallow as well as standard “physical” rehabilitation.

# BASIC Treatment Principles for Severe ABI

- Respiratory: to maintain respiratory status and prevent respiratory deterioration
- Postural management and active and passive movements
- Early mobilisation as soon as medically stable
- Encourage a return to independence
- Optimise potential functional outcome
- Provide routine and structure
- Educate the patient and care givers



# Basic Cognitive Screening:

Domain	Examples
Orientation	<ul style="list-style-type: none"><li>- Time: Age, Day/ night, Month or Season (dry/ rainy), Year, LOS/ days post-op</li><li>- Place: Name of town</li><li>- Person: Ability to identify accompanying NOK or familiar staff member</li></ul>
Attention	<ul style="list-style-type: none"><li>- “Recite months of year backwards”</li><li>- Difficulties complying with simple 1 or 2 step commands during session</li></ul>
Memory	<ul style="list-style-type: none"><li>- “I am going to tell you a list of items that I usually get from the market, you must try and remember them for me. They are: <i>cooking oil, soap, rice and eggs</i> (replace with culturally appropriate equivalents) Now repeat this list to me three times. “ Ask again after 5-10 mins. “</li><li>- No carryover between therapy sessions e.g. use of transfer board technique</li></ul>
Perceptual	<ul style="list-style-type: none"><li>- “Show me your right foot/ left hand/ with your right hand touch your left shoulder”</li></ul>
Language	<ul style="list-style-type: none"><li>- “Tell me the names of as many different animals as you can in 1 minute”</li></ul>
Executive function	Often hard to identify on a bedside screen but observed through function. For e.g. person appears indifferent or surprised when experiencing difficulties during fx tasks, difficulties problem solving in a novel task, family reporting personality change, apathy etc.

# Cognitive Strategies

Cognitive: main principle is to establish some normality and provide a daily structured regime

- Integrate ADL's into daily rehabilitation
- Practise tasks
- Grade / pace level of activity
- Teach compensatory strategies
- Consider impact on physical and sensory deficits e.g. ability to use mobility aids, manage UL weakness, visual loss
- Consider physical and cognitive fatigue leading to performance fluctuations
- Educating the patient and their family is key!!

# Other treatment strategies

- Swallowing and Nutrition
















































- Work alongside the team and family to identify a treatment plan
- Activity may need to be modified if nutritional needs are not being met

- Communication

- Communication boards examples can be given to family / locals who may be able to produce something relevant
- This is me book
- Education to family / use those around to assist



# Examples of communication aids for people with aphasia

YES	 Nurse	 Doctor	 Carer	 Walking Frame	 Wheelchair	NO
 Medicine	 Pills	 Bathroom	 Bed	 Toilet	 Bath	 Shower
 Bedroom	 Hot Drink	 Cold Drink	 Food	 Help	 I don't understand	 Slippers
 Light	 Sit up/down	 TV	 Telephone	 Newspaper	 Walk	 Teeth
 Glasses	 Clothes	 Bag	 Walking Stick	 Shopping	 Cold	 Hot
 Alone	 Husband/Wife	 Family	 Garden	 Noise	 Hearing Aid	 Watch
 Hairdresser	 Priest/Vicar	 Worried	 Pain	 Bored	 Tired	 Angry

Stroke Helpline: 01203 323130  
stroke.org.uk

**Stroke**  
association

### Communication aid for stroke survivors with aphasia

1	2	3	4	5	6	7	8	9	10
a	b	c	d	space >					
e	f	g	h	< back					
i	j	k	l	m	n				
o	p	q	r	s	t				
u	v	w	x	y	z				

Yes ✓ No X

# Small group activity

- Plan your assessment
- Plan your treatment

**Thank you!**  
**Any questions?**