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EMS ECHO 102



Approach to a Patient with Altered Mental Status

EXPERTS



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This session will delve into areas such as;

- 1.Key history in a patient with AMS
- 2.Emergency Assessment of a patient with AMS
- 3.Pre-hospital care and inter-facility transfer for a patient with AMS
- 4.ED management for a patient with AMS
- 5.AMS in special patient categories (geriatrics, pregnant mothers)
- 6.ED disposition plan for a patient with AMS



FRIDAY
10th October 2025
2-4pm EAT

Meeting ID: 942 1941 7289
use link;

<https://shorturl.at/z4SEg>

scan to register



Brief History

OM, 45/M newly diagnosed ISS, ART naive, referred with 5/7 h/o severe frontal headache associated with neck pain and low-grade fevers, irritability, productive cough with white sputum, chest pain with mild DIB & severe weight loss



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Primary Survey (Emergency Assessment)

A Patient could talk on arrival

B In mild respiratory distress, RR=26 bpm, SPO2=85% on RA, bilateral chest rise, expansion, equal and bilateral air entry. Normal breath sounds

Primary Survey (Emergency Assessment)

C	Warm peripheries, CRT<3sec, R=110b/m, BP=149/74mmHg, heart sounds 1 and 2 heard
D	Disoriented in place and time, E-4, V-4, M-5, GCS-13/15, pupils equal and reactive to light, no FNDs. RBS-9.6mmol/L
E	Severe muscle wasting, febrile (T=38.0), some dehydration, and no obvious skin rash

Poll 1

From the history and primary survey, what is the most eminent emergency in this patient?

What are the emergency Conditions?

THREATS	PRIORITY	Findings	Associated Risk
B	Hypoxia	SPO2-85% RA	Hypoxic Cardiac Arrest
	Respiratory distress	RR-26 breath/min	Respiratory failure
D	Altered mentation	GCS-13/15	Air way is at risk

And always reassess to monitor response to treatments



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Poll 2

Based on the above information,
what are your
Management options for
this patient?



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What are the emergency Conditions?

THREATS	PRIORITY	Findings	Associated Risk	Immediate Action Taken
B	Hypoxia	SPO2-85% RA	Hypoxic Cardiac Arrest	Oxygen therapy by nasal prongs
	Respiratory distress	RR-26 breath/min	Respiratory failure	Oxygen therapy
D	Altered mentation	GCS-13/15	Air way is at risk	Monitor and maintain airway patency

And always reassess to monitor response to treatments



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What happened in the ED to stabilise the patient?

- Positioning by propping up the patient
- Oxygen therapy 5L/min
- Blood taken off for investigation

This bought the team some time to find out more information

SAMPLE History

Signs & Symptoms

Severe frontal headache for 5 days associated with neck pain. no convulsions, photophobia or focal neurological defects.
Cough-3/52, productive in nature, white sputum associated with mild chest pain and DIB, RR-26breath/min

Allergies

No hx of drug or food allergies

Medications

Iv fluconazole 200mg BID
PO Cotrimoxazole-960mg OD
Iv ceftriaxone 2g OD
Iv metronidazole 500mgTID



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SAMPLE History

Past Medical History

Newly diagnosed ISS from referring facility, index admission was at the time of the diagnosis, ART naive,. No hx of DM/HTN

Last Oral Intake

Not captured

Events Leading Up to Presentation

Severe frontal headache, neck pain, productive cough in newly diagnosed with HIV referred for further investigation and management.



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Secondary Survey (Head-to-toe examination)

RELEVANT POSITIVES

- Cachectic appearance
- Fever
- Neck pain
- Nuchal rigidity/Positive kerning's sign
- Cervical lymphadenopathy
- Tachypnoea

RELEVANT NEGATIVES

- ✓ No oral or skin thrush
- ✓ Equal air entry, vesicular breath sounds
- ✓ No Splenomegaly
- ✓ No Hepatomegaly
- ✓ No Peripheral oedema
- ✓ No FNDs, Negative Brudzinski sign
- ✓ NO Peripheral neuropathies

Now what do the investigations show...

Audience question

What are all the possible differentials we need to look for?

Category	Differential
Infectious	Meningitis, encephalitis, sepsis, pneumonia
Metabolic	Electrolyte imbalance, hypo/ hyperglycaemia, uraemic encephalopathy, hepatic encephalopathy, thiamine deficiency
Iatrogenic	Drugs like benzos, opioids
Neoplastic	SOL like gliomas, meningiomas, metastases to the brain

Poll 3

What are the CSF findings in
bacterial meningitis?

Investigations

Investigation	Result
CBC	Hgb-16.5, wbc-4.32, lym-0.51, gran-3.38, plt-216
CD4	<200 copies
TB URINE LAM, gene xpert	Negative, MTB not detected
Serum crAg	positive
LFTs	normal
RFTs	normal, urea-4.42, creatinine-0.8, Na-133, K-4.96,
CSF analysis	LP-vol-10mls, OP-40, CP-25cm of water, app-clear, lactate-2.5mmol, glu-35mg/dl, csf CrAg- positive, Tprot-35mg/dl, wbc-35cells
b/s for malaria, urinalysis	No mps seen, normal

Imaging done



Diagnosis

45/m, newly diagnosed HIV with

1. Cryptococcal meningitis
2. Pneumocystis jiroveci pneumonia



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Poll 4

What is the definitive
Management option for
this patient?



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Supportive Management

- I. Oxygen therapy 5L/min by NP
- II. Position – prop up bed
- III. Iv paracetamol for pain management
- IV. Iv fluids 500mls 8hrly while monitoring output

Specific Management

Cryptococcal meningitis

Induction Phase(2 Weeks)

Single high dose liposomal-Am B 10mg/kg/iv on day 1+

- Tabs fluconazole 1200mg od-2/52
- Tabs flucytosine 25mg/kgPO QID-2/52
- weekly LPS at admission ,day 7 and 14 for culture and ICP monitoring (therapeutic LPS can be done on a daily to improve outcome)

pneumocystis jiroveci pneumonia

High dose CTX 1920mg tds -3/52

Tabs prednisolone 40mg bd -5/7



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Disposition & Follow-up plan

- Disposition- IDI ward
- Follow-up plan

Consolidation Phase(8 Wks)

- Fluconazole 800mg PO daily for 8 weeks

Maintenance Phase(6-12 Months)

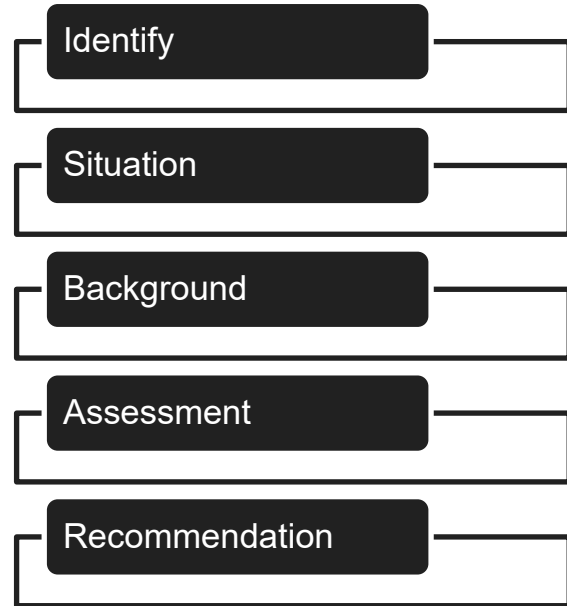
- Fluconazole -200mg po daily for 6-12 months

Prehospital team:

What do you need to prepare for pre-hospital care for this patient?

- Staff
- Patient
- Equipment / Medications
- Mode of transport
- Documentation/Handover

**By Raymond Nsubuga, RN,
FTO and EMT Student at St.
Micheal Lubaga Hospital**



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1. Scene Safety and Initial Impression

- Ensure **scene safety** for yourself, crew, and patient
- Use **Personal Protective Equipment**.
- Look for clues: empty pill bottles, alcohol containers, trauma, vomitus, medical bracelets, etc
- Quickly assess **level of consciousness (AVPU)**

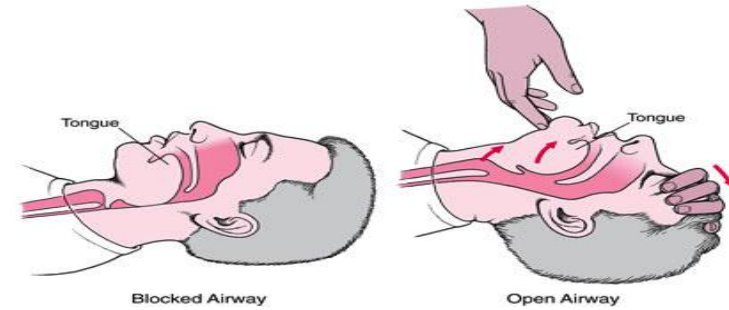


2. Perform Primary Survey

This is done following ABCDE

A – Airway

- Position the patient, for this case, in the sitting up position (patient's airway is patent)
- If the patient is not alert, check if the airway is open by looking into the mouth
- Clear any obstruction (vomitus, blood, foreign body) if any is noticed
- Use **suction, head-tilt–chin-lift**, or **jaw thrust** (if trauma suspected)
- Insert **OPA or NPA** if needed, to maintain an open airway



B – Breathing

- Perform Look, listen, and feel for breathing
 - RR(26 b/m) ,use of accessory muscles
 - Auscultation for any abnormal sounds
 - Check the SPO2 of the patient on room air
 - Considering the outcomes of the assessment, consider giving
- ❖ **high-flow oxygen** (non-rebreather mask 10–15 L/min).
 - ❖ Support ventilation with a BVM (RR- <8b/m)



C – Circulation

- Check **skin colour, capillary refill, pulse, BP**
- Assess and control any external bleeding
- Establish **IV access**
- Give **IV fluids (crystalloids)** if hypotensive or dehydrated

D – Disability (Quick Neuro Check)

- Assess the patient's level of consciousness
- **Check pupils** (size, equality, reaction)
 - Take a quick RBS to R/O hypoglycemia or hyperglycemia (If low <3 mmol/L; give D25% 4ml/Kg or D10% 5 mL/kg in children)
- For **seizures**, protect the patient and administer **Diazepam/Midazolam** if seizing
- If **opioid overdose** is suspected, **Naloxone 0.4–2 mg IV/IM/IN**



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E – Exposure

- Expose and examine for any hidden injuries, needle marks, rashes, medical tags, signs of dehydration, etc
- Check the temperature and prevent **hypothermia** (cover the patient) and treat **hyperthermia**.

Sample History

- **Signs and Symptoms:** Find out the symptoms and the signs that the client presented with
- **Allergies:** Ask about any allergies and recent exposure
- **Medications:** Find out the medications the client is using, if there are any
- **Past Medical and Surgical History:** find out about any medical or surgical condition
- **Last Oral in Take and Out Put:** Put in mind that hypoglycemia and severe dehydration can cause AMS.
- **Events Around the Condition, e.g.** alcohol intoxication, and this usually calls for a focused history take to find out

Focused History (from relatives)

- Use **AEIOU-TIPS** to think of causes:
 - **A** – Alcohol / Abuse Intoxication or withdrawal
 - **E** – Epilepsy / Electrolyte imbalance
 - **I** – Insulin Hypo-/hyperglycemia
 - **O** – Overdose / Oxygen lack Drugs, CO, hypoxia
 - **U** – Uremia, Kidney failure
 - **T** – Trauma / Head injury, Temperature/ hypothermia
 - **I** – Infection Sepsis, meningitis
 - **P** – Psychiatric / Delirium, Poisoning/ toxins
 - **S** – Stroke / Shock CVA, hypotension



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Transport & Communication

- **Rapid transport** to the nearest appropriate facility; If **unstable**, transport **while resuscitating**
- Notify the hospital through the dispatch with a **pre-alert (ISBAR)**:
 - **I**: Identify yourself and the patient
 - **S**: Situation (altered mental status)
 - **B**: Background (known illnesses, events)
 - **A**: Assessment (vitals, GCS, findings)
 - **R**: Recommendation (what is needed on arrival to the facility)

Ongoing Monitoring while in transit

- Continuously monitor:
 - **Airway, breathing, circulation**
 - **GCS** every few minutes and the level of orientation
 - **Vital signs**, including the RR, BP, SPO2, and Temperature
 - **Blood glucose**
- Document all findings and interventions for a proper handover at the receiving point

NB: Handover is done following ISBAR (Please refer to slide 11)



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Nursing team:

Is there anything else you would like to know now?

What are the **nursing priorities**
for this patient during their inpatient stay?

By: Halima Nabirye (BSN,PGDME), Nursing
Officer-ICU Nakasero Hospital



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Introduction

- Nursing management for AMS focuses on a systematic assessment to identify the underlying cause, interventions to stabilise the patient, treat the cause, and provide a safe and supportive environment

Assessment	Nursing Diagnosis	Goal/Desired Outcome	Intervention	Rationale	Evaluation
Subjective data Fever Objective data Body temperature of 38°C Skin pinch return > 3secs Dry mucus membranes, seizures	Hyperthermia related to inflammation evidenced by a body temperature of 38°C	Patient will maintain a body temperature between 36.5°C to 37.4°C in 1 hour	Administer antifungals as prescribed	Treats underlying cause of inflammation to prevent seizure activity	Patient maintained a body temperature between 36.5°C to 37.4°C in 1 hour
			Administer PCM as prescribed	Inhibits Cox-3-prostaglandin synthesis	
			Perform tepid sponging	Liberates heat by conduction and evaporation	
			Reassess & monitor vitals closely	Evaluate previous interventions	

Assessment	Nursing Diagnosis	Goal/Desired Outcome	Intervention	Rationale	Evaluation
Subjective data Loss of consciousness, convulsions Objective data Increased ICP, Cerebral edema, GCS 13/15	Disturbed sensory perception related to cerebral edema secondary to inflammation & decreased LOC evidenced by increased ICP, GCS of 13/15	Patient will maintain a GCS of 15/15 in 2 hours	Elevate HOB up to 30° to 45°	Promotes venous return decreasing the ICP	Patient had a GCS of 15/15 in 2 hours
			Reorient the patient	Promotes cognitive function	
			Assess pupil size	Increased ICP would cause uneven pupil sizes	
			Administer anti-convulsants	Enhancing GABA; Blocking glutamate; prevent seizures	
			Observe, document & report any seizures	Changes signify need for extra neurological evaluation	

Assessment	Nursing Diagnosis	Goal/Desired Outcome	Intervention	Rationale	Evaluation
Subjective data Loss of consciousness, convulsions Hx of falls, clutches Objective data Low GCS; RASS	Risk for falls related to altered neurological function	Patient will remain free of falls within the next 8 hours	Assess muscle strength	Decreased strength can alter coordination and balance	Patient remained free of falls within the 8 hours
			Use the Morse Fall Scale	identify risk factors for potential falls	
			Rails up	Prevent rolling out of bed	
			Use fall risk identification	Alert other staffs when assisting the patient	
			Keep the bed in the lowest position	Prevent injuries from falling out of bed	

Assessment	Nursing Diagnosis	Goal/Desire d Outcome	Intervention	Rationale	Evaluation
Subjective data Verbalization of concern about the illness Objective data Elevated vitals; BP149/74m mHg Sweating, Restlessness , Trembling, New dx	Anxiety related to change in health status, change in environment expressed concern or worry about illness and hospitalization	Patient will experience decreased anxiety in 2 hours	Encourage to express concerns	Opportunity to vent feelings, secure information to reduce anxiety	Patient experience decreased anxiety in 2 hours
			Encourage N.O.K to stay or visit when able	Allows N.O.K to care for and support the patient	
			Encourage involvement in care and decision making	Enhances collaboration	
			Teach about disease process	Provides relevant information	
		  	 	relieving anxiety	

Assessment	Nursing Diagnosis	Goal/Desire d Outcome	Intervention	Rationale	Evaluation
Subjective data Altered LOC Objective data Disorientation in place and time; GCS 13/15, Hallucination, agitation, restlessness, SPO2 85%	Acute Confusion related to inflammation and cerebral edema evidenced by disorientation in place and time	The patient will regain normal reality orientation and LOC in 3 hours	Reorient the patient	Promotes cognitive function	The patient will regain normal reality orientation and LOC in 3 hours
			Monitor RBS	Hypoglycemia-impaired brain function Hyperglycemia-damaging blood vessels	
			Administer O2 as prescribed	Cellular respiration	
			Pain mgt as indicated	Pain causes neuroinflammation, consumes working memory and attentional resources	
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References

- Herdman, T. H., Kamitsuru, S., & Takáo Lopes, C. (Eds.). (2024). NANDA International nursing diagnoses: Definitions and classification, 2024-2026 (13th ed.). Thieme



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Now, let's dive into the ED & Acute Care Management of this Patient's condition

Prof. David Meya, Infectious Disease Physician, HOD
Internal Medicine Department at MakCHS

How should you approach this patient as an ED doctor?



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Thank you



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