

SCRIPT

STROKE MIMIC BY HYPOGLYCEMIA



SCENARIO

#67

NAME

RALPH SANDFORD

SPECIALTY

Neurology

DIFFICULTY LEVEL

INTERMEDIATE

SIMULATION ENVIRONMENT

PRE HOSPITAL - AMBULANCE

Scenario

General description of the scenario info. Corresponds to the initial information presented to the trainee when selecting this scenario.

Title

Stroke mimic by hypoglycemia

Context

Ralph was found at home with slurred speech and left side hemiparesis.

Briefing

Male patient of 69 years of age. He was found at home with slurred speech and left side hemiparesis. Relatives activated the emergency team for hospital transfer three hours ago.

General learning objective

Recognize hypoglycemia as a stroke mimic.

Specific learning objectives

Management of hypoglycemia

Pre-simulation notes

-

Environment

Pre Hospital

Specialty

Neurology

Difficulty Level

Intermediate

Reviewers

Angels Initiative

Patient characteristics

Characterization of the patient's demographic, habits, behavior and specific status effects.

Avatar



Patient Name

Ralph Sandford

Age

69 years

Race/Ethnicity

European/Caucasian

Eye color

Brown

Conscious

Yes

Confused

No

Last meal over 2h

Yes

Speech impairment

No

Renal metabolic compensation

Auto

Gender

Male

Main hair color

Light gray

Smoker

No

Sedated

No

Agitated

No

Facial palsy

-50

Eyelid closure

0

Patient parameters

These parameter values are used by the simulator to initialize this scenario.

Systolic arterial blood pressure (mmHg)

110

Heart rate (bpm)

60

Respiratory rate (/min)

14

Temperature (°C)

36

Urinary output (mL/kg/h)

0.6

Diastolic arterial blood pressure (mmHg)

75

O2 saturation (%)

97

Blood glucose (mg/dL)

40

Hemoglobin (g/dL)

13.3

Weight (kg)

90

Height (cm)

168

BMI

31.9

Potassium (mEq/L)

4.1

Sodium (mEq/L)

139

Speech rate (speed multiplier)

1

Physical examination

The items below characterize the patient's physical examination and monitoring findings on admission.

Airway

Airway observation

1st Priority

Airway is open, not obstructed and safe. No upper airway abnormal noises.

Breathing

Chest palpation

2nd Priority

2L - normal; 2R - normal

Chest percussion

2nd Priority

Right: 1R - resonance; 2R - resonance; 3R - resonance; 4R - resonance; 5R - resonance
Left: 1L - resonance; 2L - resonance; 3L - superficial cardiac dullness; 4L - superficial cardiac dullness; 5L - resonance

O2 Sat (%)

1st Priority

97

Pulmonary auscultation

1st Priority

Clear to auscultation, with normal vesicular murmurs in all sites.

Respiratory rate (/min)

1st Priority

14

Circulation

Blood pressure (mmHg)

1st Priority

110 / 75

Capillary refill time (s)

1st Priority

1.3

Cardiac auscultation

1st Priority

Regular rate and rhythm, normal S1 and S2 sounds, no murmurs, gallops or rubs.

Heart rate (bpm)

1st Priority

60

Pulse palpation

1st Priority

Carotid - Amplitude: strong; Rhythm: regular;
Radial - Amplitude: strong; Rhythm: regular, equal both sides;

Urinary output (mL/kg/h)	1st Priority	Femoral - Amplitude: strong; Rhythm: regular, equal both sides; Dorsalis pedis - Amplitude: strong; Rhythm: regular, equal both sides 0.6
Disability		
Blood glucose (mg/dL)	1st Priority	40
Glasgow Coma Scale	1st Priority	14 (E = 4; V = 4; M = 6)
Pupil light reflex	1st Priority	Right: Size - 4 mm; Right eye light: 2 mm; Left eye light: 2 mm Left: Size - 4 mm; Right eye light: 2 mm; Left eye light: 2 mm
Exposure		
Abdominal auscultation	2nd Priority	Normal hydro-aerial sounds without abdominal murmurs.
Abdominal palpation	2nd Priority	No rigidity. No pain. No guarding or signs of peritoneal irritation. No masses or palpable organomegalies.
Abdominal percussion	2nd Priority	6R - tympanic; 7R - tympanic; 6L - tympanic; 7L - tympanic.
Temperature (°C)	1st Priority	36

Dialogues

This is a complete list of all the possible dialogue lines by both the health practitioner (on the left) and the respective responses from the patient (on the right).

History Taking

Chief Complaint

01. What happened to you?	1st Priority	I started to feel less strength in the... left side of my body.
02. Did you pass out?	2nd Priority	I don't think so.

History of Present Illness

03. Are you feeling any pain?

No.

2nd Priority

04. What were you doing
when you felt ill?

I was watching TV. I haven't done anything
special this afternoon.

2nd Priority

05. Were you doing any
physical activity when you
became ill?

I wasn't exerting myself at all.

2nd Priority

06. Do you have any sensory
changes?

The left side of my body is numb.

2nd Priority

07. Have the symptoms
progressed?

Yes.

2nd Priority

08. Is your eyesight OK?

Yes.

2nd Priority

09. When was the last time
that you had something to
eat?

I ate about three hours ago.

1st Priority

10. Are these symptoms
coming back?

Yes... I had a stroke where I had a weakness
in the left part of my body. But I recovered
and had no major limitations.

2nd Priority

11. What was the last thing
you ate?

I had breakfast. It was an English breakfast
with French pastries.

2nd Priority

Past Medical/Surgical History

12. Do you have high blood pressure?

Yes.

2nd Priority

13. Do you have high cholesterol?

Yes.

2nd Priority

14. Do you have any other health problems?

I have type 2 diabetes, dyslipidemia, and high blood pressure.

1st Priority

15. Have you had any severe illnesses or injuries before?

Three years ago I suffered an ischemic stroke.

1st Priority

Medications and allergies

16. What medication have you been taking?

I am taking insulin, candesartan, atorvastatin, acetylsalicylic acid and omeprazole.

1st Priority

17. Have you started any new medication?

No... Well... I have taken today extra insulin.

1st Priority

18. Have you felt any side effects from your medication?

No.

2nd Priority

19. Are you taking any supplements?

No.

Not a priority

20. Do you have any allergies?

No.

2nd Priority

Social history

21. Can you please say what you usually eat?

I eat everything. My wife cooks very good meals.

2nd Priority

22. How active are you?

Well, I'm not very active. For example, I only go for a walk very occasionally.

Not a priority

23. What do you do?

I am retired.

Not a priority

24. How many meals do you have a day?

Normally, I have four meals a day.

2nd Priority

25. Have you been under any stress lately?

No.

Not a priority

26. Do you eat snacks between meals?

Yes, sometimes.

Not a priority

27. Have you felt any changes to your appetite?

No.

Not a priority

28. How often do you drink alcohol?

I normally drink a glass of wine with meals.

Not a priority

29. Do you smoke?

No.

Not a priority

30. Any recent weight changes?

No.

Not a priority

Diagnostic strategies

The items below characterize the possible test results during this scenario, including rules that may condition test results.

Decision aids

FAST scale

1st Priority

Initial: Facial droop: One side of face does not move at all
Arm drift: Both arms move equally
Speech: Slurred or inappropriate words

Hypoglycemia is treated: Facial droop: Both sides of face move equally
Arm drift: Both arms move equally
Speech: Patient uses correct words with no slurring

Stroke scale (NIHSS)

Not a priority

- Initial: 5 - Moderate stroke.
- If patient deteriorates (Severe hypoxia is active): 14 - Moderate stroke.
- If patient deteriorates more (Severe consciousness impairment is active): 27
- Severe stroke
- Hypoglycemia is treated: 1 - Minor stroke

Electrophysiology

12-Lead ECG

Not a priority

No significant changes

Initial notifications

Initial notifications presented to the trainee after a specified amount of time after starting the simulation

Medical test

Time

Clinical information

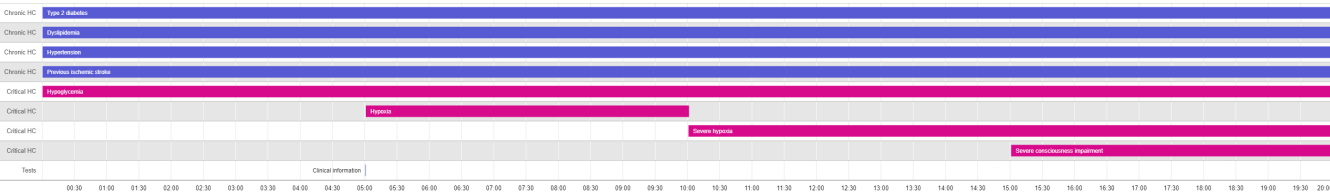
05:00

- Source: Family members
- Current medication:
Insulin NPH 18 IU at breakfast and 9 IU at

dinner [6 IU extra today after a big breakfast
which was more or less 3 hours ago]
Candesartan 16 milligrams daily \n -
Atorvastatin 40 milligrams daily
Acetylsalicylic acid, 100 milligrams daily
Omeprazole 20 milligrams daily

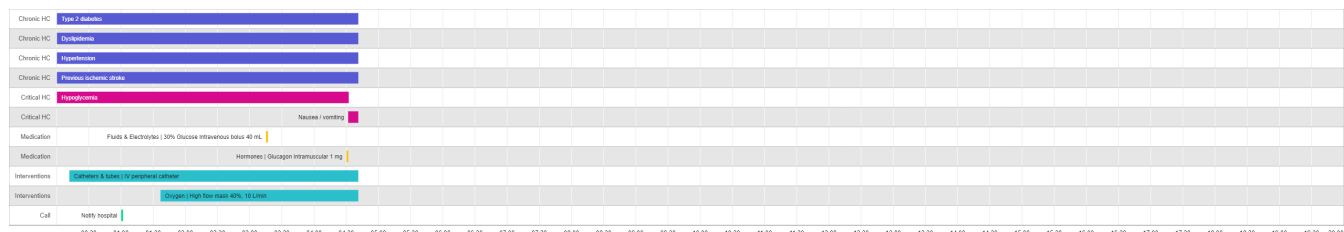
Baseline

This section is automatically generated and predicts scenario behavior assuming no actions by the trainee, which usually represents the worst-case scenario.



Optimal clinical approach - International

This section previews how the optimal approach resolves the scenario successfully. Comparison with Baseline may be useful to understand the scenario behavior.



Treatment priorities

Treatment items that are considered necessary or adequate to solve this scenario are listed below. Notes: 1st Priority - mandatory items to solve the case successfully. 2nd Priority - optional items that are considered adequate, but are not essential. Not a Priority - unnecessary items that are considered inadequate or a waste of time.

i.42 - To treat: Hypoglycemia - optimal

1st Priority

Medications | 30% Glucose

Medications | 50% Glucose

i.43 - To treat: Hypoglycemia - suboptimal

2nd Priority

Medications | 5% Glucose

Medications | 10% Glucose

Medications | Oral glucose

i.44 - To treat: Hypoxia/severe hypoxia

1st Priority

Interventions | High flow mask

Interventions | Nasal cannula

i.45 - To treat: Hypoxia/severe hypoxia

2nd Priority

Interventions | Non-rebreathing mask

i.46 - To notify hospital

1st Priority

Call | Notify hospital

This message appear: "The ambulance is travelling to the hospital."

i.47

1st Priority

Medications | Hormones | Glucagon

i.48

1st Priority

Interventions | Catheters & tubes | IV peripheral catheter

Assessment question(s)

Questions presented to the trainee in order to have a more detailed evaluation of the use of the clinical scenario.

Summative Multiple Choice Question:

Question

What is the most likely diagnosis?

Correct answer

Hypoglycemia

3 Incorrect answer(s)

Acute ischemic stroke

Meningitis

Epileptic fit

Ending messages

Feedback messages presented to trainees for particular successful or failed approaches and the respective conditional rules that trigger these messages.

Title	Type	Message	Conditional
End condition	Success	Your practice meets the guidelines' requirements.	Treating the patient's conditions according to guidelines.

References

1. Committee TESO (ESO) EC and the EW. Guidelines for Management of Ischaemic Stroke and Transient Ischaemic Attack 2008. *Cerebrovascular Diseases*. 2008;25(5):457-507.
2. Powers WJ, Rabinstein AA, Ackerson T, et al. 2018 Guidelines for the Early Management of Patients With Acute Ischemic Stroke: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. *Stroke*. March 2018.
3. Wahlgren N, Moreira T, Michel P, et al. Mechanical thrombectomy in acute ischemic stroke: Consensus statement by ESO-Karolinska Stroke Update 2014/2015, supported by ESO, ESMINT, ESNR and EAN. *International Journal of Stroke*. 2016;11(1):134-147.