

Syllabus	NA_IK_20, MT_IK_04
Topic	Subarachnoid haemorrhage

Megan, a 30 year-old woman collapses in work following the onset of a severe headache. She is a smoker and uses amphetamine recreationally. She arrives in the Emergency Department (ED) with a GCS of 14 (E4,V4, M6). A subsequent CT brain shows intraventricular blood and a diagnosis of subarachnoid haemorrhage (SAH) is made.

a)

List 3 other risk factors associated with SAH (3 marks)

- 1)
- 2)
- 3)

Two hours after admission Megan's GCS drops to 3/15

b)

Give 2 likely causes for her change in GCS (2 marks)

- 1)
- 2)

c)

List 4 indications for intubation in a patient with a brain injury (4 marks)

- 1)
- 2)
- 3)
- 4)

d)

What is secondary brain injury and when is it likely to occur? (2 marks)

.....
.....

e)

List 3 scoring systems for grading severity of subarachnoid haemorrhage (3 marks)

1.
2.
3.

f)

State 2 late neurological complications of subarachnoid haemorrhage (2 marks)

1.
2.

g)

What drug (route, dose, frequency and duration) would you prescribe to reduce the risk of vasospasm? (4 marks)

- Drug:
- Route:
- Dose:
- Frequency:
- Duration:

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Q	Answer	Mark	Guidance
a)	<ul style="list-style-type: none"> • Hypertension • Atherosclerosis • Cocaine • Alcohol abuse • Polycystic Kidney Disease • Ehlers-Danlos Type 4 • Familial inherited disorders 	1 mark for each (Max. 3)	
b)	<ul style="list-style-type: none"> • Re-bleed • Hydrocephalus • Seizure 	Max 2 marks	1 mark for each
c)	<ul style="list-style-type: none"> • GCS <8 • Reduction in GCS ≥ 2 points • Optimize oxygenation and ventilation • Seizures • Protect airway in absence of laryngeal reflexes • Control CO₂ 	1 mark for each (Max. 4)	
d)	<ul style="list-style-type: none"> • Secondary brain injury is the deleterious changes that happen over hours to days in the brain as a consequence of the initial injury • Mediated by inflammatory, neurogenic and vasogenic processes 	1 1	
e)	<ul style="list-style-type: none"> • Hunt and Hess • World Federation of Neurosurgeons Scale (WFNS) • Fischer Scale 	3	GCS is a scoring system and may be awarded a mark
f)	<ul style="list-style-type: none"> • Delayed Cerebral Ichaemia • Vasospasm • Hypopituitarism • Cognitive Impairment • Fatigue • Mood disturbance 	2	DCI and vasospasm can occur in tandem
g)	<ul style="list-style-type: none"> • PO/NG Nimodipine • 60mg • 4 hourly • 21 days 	4	Can be given IV if on ITU

References:

1) Luoma A, Reddy U. Acute management of aneurysmal subarachnoid haemorrhage. Srivastava A, Kelleher A. Point-of-care coagulation testing. CEACCP (2013) 13(2)52-58
<https://academic.oup.com/bjaed/article/13/2/52/283650>

2) Priebe H-J. Aneurysmal subarachnoid haemorrhage and the anaesthetist. BJA (2007) 99(1)102-118 <https://academic.oup.com/bja/article/99/1/102/268584>