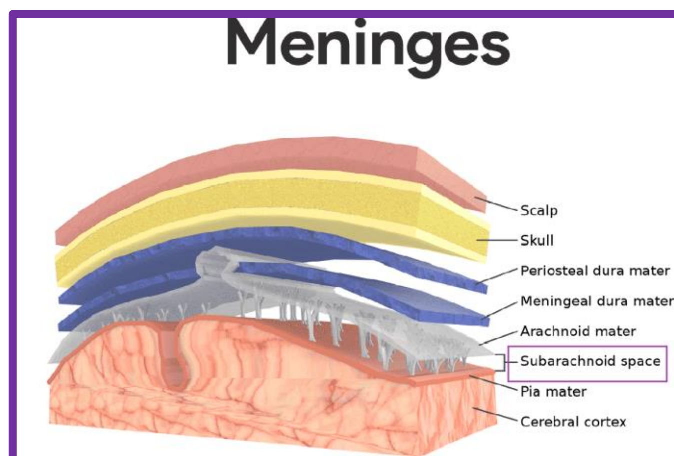
Management of Spontaneous Subarachnoid Haemorrhages

Definition

Arterial bleed into Subarachnoid space of the patient's brain



Key points:

- Most commonly caused by a burst aneurysm in the cerebral circulation – to prevent further bleeding the aneurysm can be coiled (an endovascular procedure) or clipped (an external procedure with a craniotomy)
- Important to establish whether aneurysm is unprotected or protected ie. pre or post coiling/clipping as this dictates cardiovascular parameters
- HIGH risk of complications - vasospasm (see separate guide) and rebleeding (50% case fatality)
- Must have 1-2 hourly FULL neurological assessment (GCS, pupils AND limbs documented)
- Require careful management and constant observation for changes as patients can deteriorate quickly
- A protected aneurysm is one that has been secured (either clipped or coiled and an unprotected aneurysm has not been and at a **VERY** high risk of re-bleeding

On admission:

- Send troponin and NT-proBNP with admission bloods and send urine electrolytes
- 12-lead ECG (must have daily ECGs if on inotropes)
- Ensure enteral access for Nimodipine ASAP (60mg 4 hourly or 30mg every 2 hours)
- The patient must not miss more than 2 doses and Nimodipine must not be given together with Paracetamol due to their combined hypotensive properties.
- Ascertain if aneurysm identified/protected? If not known – aim SBP 120-160mmHg but clarify with neurosurgical team!

Daily Management with PROTECTED ANEURYSM:

- PaO2 > 10kPa
- Maintain normovolaemia – calibrated LiDCO (Fluid Challenges against LiDCO
- Hb 80-100
- Daily ECG (if on inotropes)
- 1- 2 hourly neurological assessment (and FULL description on care plans/handover) – can de-escalate to 4 hourly after 48hrs or more stable
- If GCS drops or limb power changes **urgently** contact neuro surgeon and inform anaesthetic consultant
- Aim **SBP 120-220mmHg** or as per neuro consultant target – if vasospasm suspected then will be for higher SBP targets (see separate Vasospasm guide)
- Blood glucose 6-10mmol/l – start Insulin infusion if >10mmol for >4 hours
- Monitor Na+, K+, Mg (keep above 1.0 mmol/dl) & PO4 at least daily and replace as required – see Sodium Imbalances quick guide
- Ensure adequate pain relief and anti-emetics – at least Paracetamol QDS + Oramorph 10mg 4 hourly with 4-8mg IV Ondansetron + 50mg IV Cyclizine TDS PRN
- Laxatives – to avoid straining, give Docusate + Senna BD (escalate with Laxido if BNO >3 days and consider glycerine suppositories and/or phosphate enema if BNO >5 days)
- VTE prophylaxis – Flotrons at all times
- If patient has been coiled– must stay flat for 6 hrs post op with regular stab site and pedal pulse checks 15min intervals for 1st hour, 30 min for 2nd hour and hourly for 4 hours (report any signs of haematoma/swelling and/or loss of pedal pulse)

Daily management with UNPROTECTED ANEURYSM:

- Aim **SBP 120-160 mmHg**
- Be cautious if patient is on inotropes – slow double pumping
- If patient ventilated, try to avoid prolonged coughing/suctioning to prevent hypertension
- In all other aspects, manage as per protected aneurysm patients above