Evidence Based Management of Aneurysmal Subarachnoid Haemorrhage: Audit of Current Practice

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Introduction

Subarachnoid haemorrhage (SAH) accounts for 5% of all stroke in the UK, with overall mortality of 50%. One-third of survivors are dependent for care and almost half will have cognitive impairment sufficient to affect their quality of life (1).

Methodology

- All patients undergoing endovascular coiling at University Hospital North Midlands from May to Oct 2014
- Retrospective data collection using a pro-forma developed from the AHA/ASA 2012 guidelines (2).

Results

- 21 patients: female 90%, male 10%
- Age: - Range 25 - 67 years
- Mean 54.5 +/- 11.3 years
- Aneurysm - Single: 67%, multiple 33%
- Less than 7 mm 71%, ≥ 7mm 29%
- 52% transferred from other hospitals
- 33% of patients had additional procedures: EVD, decompressive craniectomy

- 100% of patients received nimodipine
 - 33% received 1st dose after 4 hours
 - 38% missed between 2 - 4 doses
- 57% of patients had SBP> 160mm Hg before coiling

Tab. 1 Perioperative Systolic Blood Pressure

	Highest Systolic Pre op	Lowest Systolic Pre op	Highest Systolic Post op	Lowest Systolic Post Op
Mean	173	133	174	130
Range	220	98	240	100

Fig.1 Time to definitive treatment

- Mean haematocrit was 0.41 pre-op and 0.35 post-op
- Six months follow up
 - 2 patients died (10%), both had a re-bleed
 - 52% of patients had a Modified Rankin Score ≥2

Discussion

Retrospective collection of data has limitations. There is good access to interventional radiology services as evidenced by 90% of aneurysms being secured within 48 hours. Blood pressure control was variable with clear episodes of hypertension in unsecured aneurysms. Data on fluid balance was very sparse but perioperative haematocrit levels indicate that fluid administration could be increased. Overall, peri-operative care was appropriate as evidenced from good outcomes at 6 months. Potential areas for improvement:

- administration of nimodipine
- better peri-operative blood pressure control

Future audit will be improved following introduction of a prospectively compiled data base.

Conclusion:

Good practice was observed at UHNM complying with the recommendations of the AHA/ASA for definitive treatment of aneurysm within 72hrs. We are introducing a check-list style proforma with key interventions to be signed and dated in front of patient notes to improve and standardise care.

Fig.2 Acute Management of SAH checklist proforma

References:

1. Luoma A, Reddy U; **Acute Management of aneurysmal subarachnoid haemorrhage**; Continuing Education Anaesthesia Critical Care Pain (2013) 13 (2): 52-58.

2. Connolly E et al. **Guidelines for the management of aneurysmal subarachnoid hemorrhage: a guideline for healthcare professionals from the American Heart Association/American Stroke Association**. Stroke.2012;43:1711–1737.