

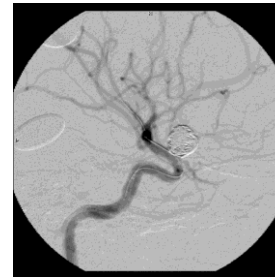
Screening for Brain Aneurysms: Who, When and How?

Mohsen Javadpour
Consultant Neurosurgeon

Beacon Hospital & Beaumont Hospital

WHO criteria for screening

- Untreated – poor outcome
 - Subarachnoid haemorrhage – 1/3 die
- Natural history well understood
 - Not really
 - Largest study 1998
 - Size and location of aneurysm
- Treatment available
 - Yes
 - Risks have reduced



Familial Aneurysms

2 or more First degree relatives with SAH 👍 👍

- Lifetime risk of aSAH up to 20%
- Smoking and Hypertension

1 First degree relative with SAH 👍

- Previous guidelines No (based on study 25 years ago)
- Lifetime risk of aSAH 3-4%
- More recent study – cost effective

No First degree relative with SAH 🗨️

- Lifetime risk of aSAH 0.5%

First degree relatives with unruptured aneurysm ??

- No data available

Other Groups

- **ADPKD** 👍 👍
 - Upto 6% die of aSAH
 - aSAH incidence 20 times higher than general population
 - aSAH at younger age (median 43 vs 53)
 - Screening cost-effective even if no FHx
 - Repeat MRA every 5 years if negative
- Type IV Ehlers Danlos (vascular type)?
- Loeys-Dietz?
- FMD?
- Marfans???

Counselling

| Items |
|--|
| Purpose of screening |
| Chance of finding an UIA during initial and follow-up screening |
| Risk of ASAH |
| Types of preventive treatment of UIAs and inherent risks |
| Treatment of risk factors hypertension and smoking |
| Ages to start and stop screening |
| Chance of finding UIAs which are too small for preventive treatment and require regular follow-up imaging |
| Screening decreases the risk of ASAH, but does not completely rules out this risk – there remains a small risk |
| Consequences of screening outcome for children of screening candidate |
| Implications for driving and flying licences |
| Implications for life insurance |
| Risk of incidental findings |
| Give candidates time to think |

UIA: Unruptured intracranial aneurysm; ASAH: aneurysmal subarachnoid hemorrhage.

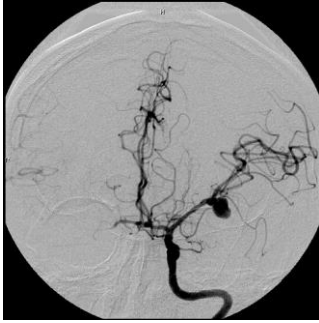
Rinkel GJE, Ynte MR
Int J Stroke
2022; 17(1): 30-36

Dedicated clinic for familial aneurysm screening counselling will be set up at Beacon Hospital soon

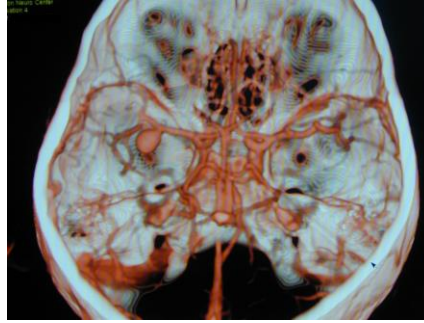
What age? How often?

- > 70 – Risk of treatment high
- < 20 – Aneurysms very rare
- Cost effective between ages of 20 – 70
- If initial screening negative
 - Consider repeating every 5 years

How to screen?



Catheter angio
Gold standard
But small risk of
stroke



CTA
80-99% sensitivity
Radiation & contrast



MRA
80-99% sensitivity
No radiation / contrast

Modality of choice MRA

Conclusions

- After appropriate counselling offer screening to:
 - Those with 1 or more First degree relatives
 - ADPKD
 - Between ages of 20-70
- MRA
- Repeat every 5 years if initial MRA negative

NEUROSURGERY



Prof. Mohsen Javadpour

Mohsen.Javadpour@imeddoc.com



Mr. Kieron Sweeney

outpatients@beaconhospital.ie
Dee.Playdon@beaconhospital.ie

INTERVENTIONAL NEURORADIOLOGY



Dr. Patrick Nicholson



Dr. Alan O'Hare



Dr. Sarah Power



Dr. Matt Crockett

Thank You

