Investigators meeting
Thursday 7 June 2012
Why study microbleeds?
The case of Mr AS

• 78 year old man
• Admitted with sudden dysphasia
• Abrupt onset, gradual recovery over 36 hours
• MRI showed a left temporal lobe infarct and multiple microbleeds
• Normal extracranial and intracranial vessels
• PFO with atrial septal aneurysm and spontaneous right to left shunt
• History typical of an embolism, probably from a proximal source (clean arteries leading to the affected region of the brain)
• Anticoagulated with LMWH with plan for PFO closure
• Day before PFO closure planned was watching TV and developed a headache and rapidly reducing conscious level
Outcome

- Suffered large right hemisphere temporal lobe ICH
- Treated with recombinant activated factor VII
- Decompressive craniectomy
- Bithalamic infarction due to raised ICP compressing PCA perforators
- Survived, but persistent coma
Issues raised by the case

- Role of PFO and ischaemic stroke
- Role of anticoagulation in presumed cardioembolic stroke
- **What (if anything) to do when we find cerebral microbleeds?**
Cerebral microbleeds: capturing the interest of researchers

‘Microbleed’ papers in Pubmed 1999-2010
Prevalence of microbleeds

Charidimou and Werring *Fut Neurol* 2011
Location, location, location!
Cerebral amyloid angiopathy

Hypertensive arteriopathy
Insights from population-based studies

Rotterdam scan study

Strictly lobar CMBs associated with APOE genotype

No association of deep CMBs with APOE genotype

If lobar CMBs are a marker for early CAA this may have important clinical implications for treatment and prevention.
Cerebral amyloid angiopathy

Hypertensive arteriopathy (Arteriolosclerosis)
Effects of small vessel disease

Small vessel diseases

- Ischaemia
  - Lacunar stroke syndrome
  - Cognitive, gait impairment

- Bleeding
  - Intracerebral haemorrhage
**Microbleeds and genetic risk factors to predict the risk of intracerebral haemorrhage in anticoagulated patients after cardioembolic ischaemic stroke**

**NESTED STUDY:** Case-control genetics and imaging study of warfarin-related ICH (n= 600)

- Adults (>17 years old)
- Diagnosis of AF, intention to treat with warfarin
- Previous ischaemic stroke / TIA
- T2* GRE MRI and standard MRI sequences before starting warfarin

Outcomes
- Symptomatic ICH
- Recurrent stroke / TIA
- Time in range
- Deterioration in cognitive function and QoL

**n=1000**, UK wide study 2 year follow-up
Outline for the day

• Study update – Clare Shakeshaft
• Small vessel disease, microbleeds and ICH – Dr Andreas Charidimou
• Site in focus – Royal Devon and Exeter team
• New anticoagulants – Dr Hannah Cohen
• Recruiting scenarios
• Keynote presentation: preventing strokes in AF – Prof Paulus Kirchhof
• Future plans and close
• Drinks Reception
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