

# Cerebral microbleeds and stroke risk after ischaemic stroke or transient ischaemic attack: a pooled analysis of individual patient data from cohort studies

ESOCC 2019

5<sup>th</sup> European Stroke Organisation Conference

22 - 24 May 2019 | Milan, Italy

*The Microbleeds International Collaborative Network*

Stroke  
association



In press, *The Lancet Neurology*, May 2019

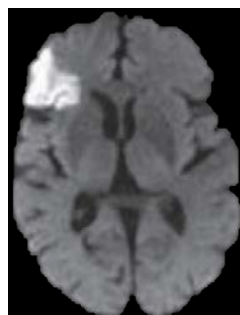
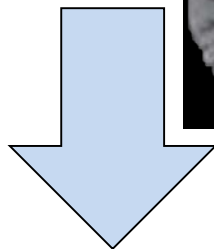
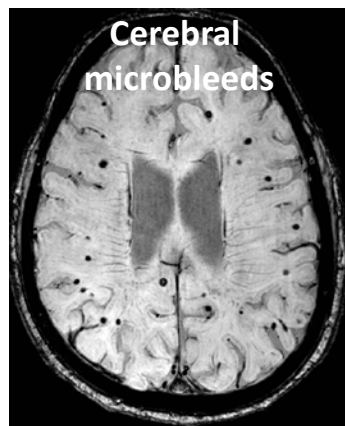


UCL STROKE  
RESEARCH  
CENTRE



# Background: a common clinical dilemma

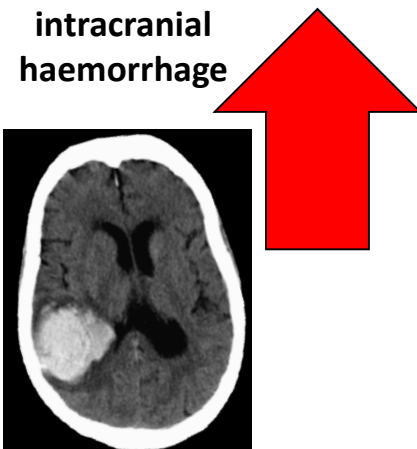
- Ischaemic stroke or TIA; MRI scan with blood-sensitive imaging shows cerebral microbleeds (CMBs)
- Do CMBs influence the risks of intracranial haemorrhage and ischaemia?



ischaemia



OAC, antiplatelets



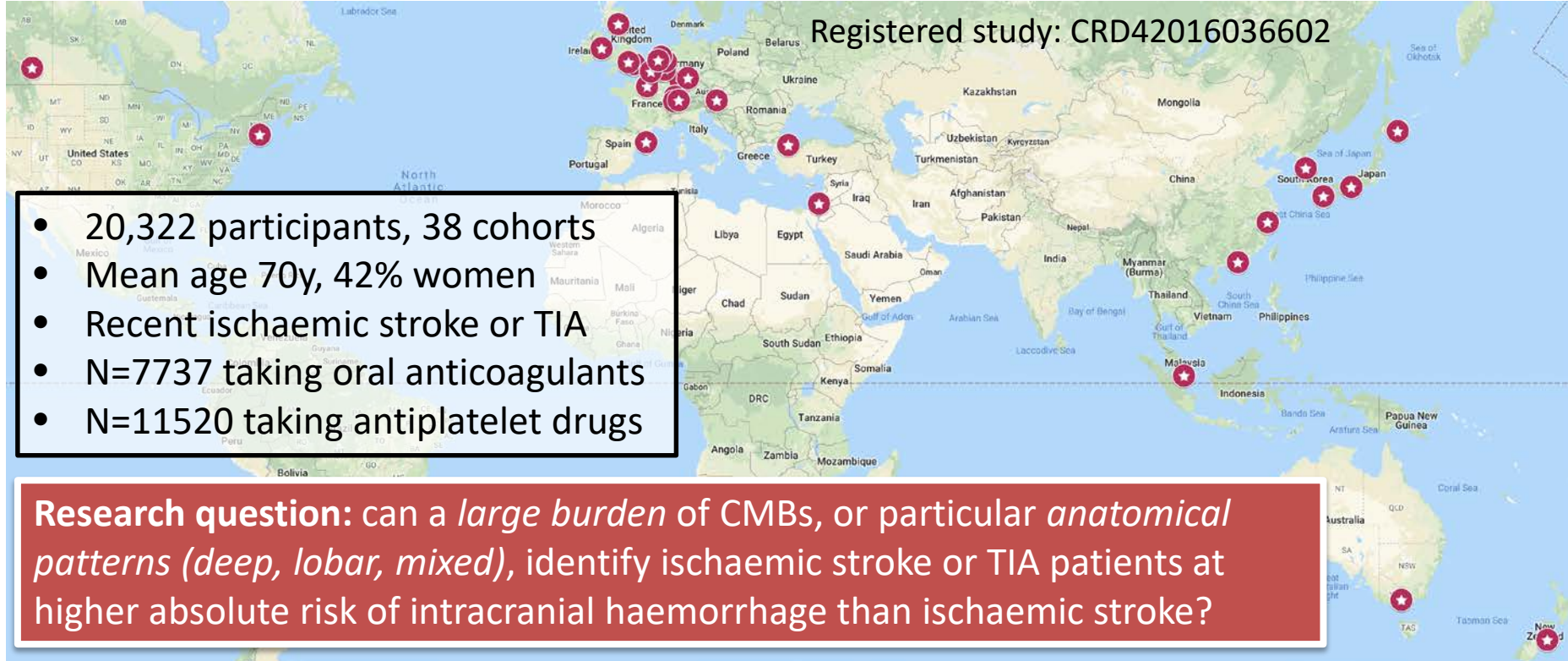
intracranial haemorrhage

ischaemia

antithrombotic treatments can reduce ischaemia but might increase bleeding

haemorrhage

# The Microbleeds International Collaborative Network: a pooled analysis of individual patient data from cohort studies



# Main results

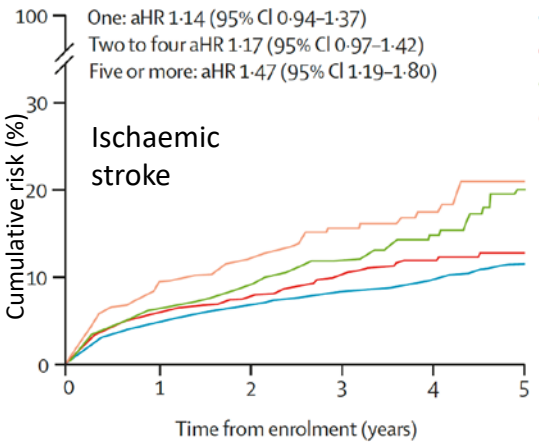
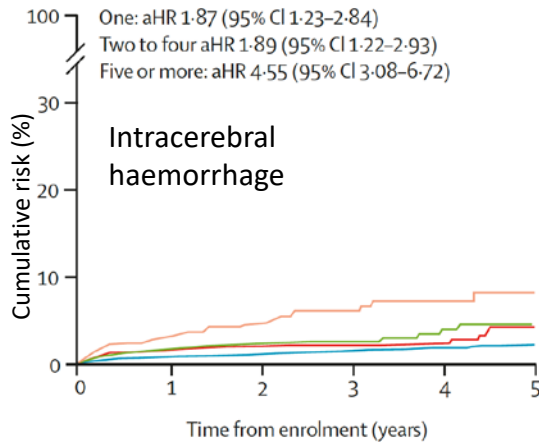
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Kaplan-Meier estimates for stroke outcomes



Cerebral microbleeds

- Absent
- One
- Two to four
- Five or more

The **relative hazard (aHR)** for intracranial haemorrhage increased with increasing CMB burden; this effect was less marked for ischaemic stroke

The **absolute risk** of **ischaemic stroke** exceeded that of **intracranial haemorrhage**

- For  $\geq 10$  cerebral microbleeds, **64** [95% CI 48–84] vs **27** [17–41] per 1000 patient-years
- For  $\geq 20$  cerebral microbleeds, **73** [95% CI 46–108] vs **39** [21–67] per 1000 patient-years)
- This was also the case for all CMB anatomical distributions (lobar, deep, mixed)

**Answer:** in patients with recent ischaemic stroke or TIA, the absolute risk of ischaemic stroke exceeds that of intracranial haemorrhage irrespective of CMB burden or distribution.