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

The Microbleeds International Collaborative Network

Ischaemic stroke or TIA; MRI scan with blood-sensitive imaging shows cerebral microbleeds (CMBs)

Do CMBs influence the risks of intracranial haemorrhage and ischaemia?

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?

OAC, antiplatelets

Cerebral microbleeds

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

- 20,322 participants, 38 cohorts
- Mean age 70y, 42% women
- Recent ischaemic stroke or TIA
- N=7737 taking oral anticoagulants
- N=11520 taking antiplatelet drugs

Registered study: CRD42016036602

Research question: can a large burden of CMBs, or particular anatomical patterns (deep, lobar, mixed), identify ischaemic stroke or TIA patients at higher absolute risk of intracranial haemorrhage than ischaemic stroke?
Main results

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.