Table 1: Baseline population characteristics stratified by whether the patient underwent intracranial vascular imaging.

|                                | Intracranial vascular imaging (n=2,013) | No Intracranial vascular imaging (n=485) | p-value |
|--------------------------------|----------------------------------------|-----------------------------------------|---------|
| Mean age (SD)                  | 67.4 (15.1)                            | 66.8 (18.4)                             | 0.45    |
| Male sex (%)                   | 1009 (50.1)                            | 210 (43.3)                              | 0.007   |
| Caucasian (%)                  | 1890 (93.9)                            | 401 (89.1)                              | 0.88    |
| Hypertension (%)               | 1033 (51.3)                            | 223 (50.9)                              | 0.17    |
| Diabetes mellitus (%)          | 251 (12.5)                             | 65 (14.9)                               | 0.25    |
| Hyperlipidaemia (%)            | 635 (31.5)                             | 125 (28.7)                              | 0.53    |
| Current smoker (%)             | 284 (14.1)                             | 56 (13.0)                               | 0.001   |
| Atrial fibrillation (%)        | 270 (13.4)                             | 87 (19.9)                               | 0.001   |
| Any vascular disease§ (%)      | 536 (26.6)                             | 156 (35.9)                              | <0.0001 |
| History of stroke or TIA (%)   | 279 (13.9)                             | 70 (16.0)                               | 0.25    |
| PVD (%)                        | 110 (5.5)                              | 55 (12.6)                               | <0.0001 |
| IHD (%)                        | 232 (11.5)                             | 72 (16.6)                               | 0.004   |
| Event type                     |                                        |                                        |         |
| TIA (%)                        | 1022 (50.8)                            | 121 (24.9)                              |         |
| Minor stroke (%)               | 587 (29.2)                             | 108 (22.3)                              | <0.0001 |
| Other diagnosis (%)            | 404 (20.1)                             | 256 (52.8)                              |         |

PVD= peripheral vascular disease, IHD= ischemic heart disease, MRA= magnetic resonance angiography, CTA= computed tomography angiography.

§Vascular disease= prior ischemic stroke/ TIA, PVD or IHD.
**Supplementary Table 2**: Baseline population characteristics stratified by the presence of asymptomatic unruptured intracranial aneurysm and discharge diagnosis.

| Characteristic                  | Patients with intracranial vascular imaging (n= 2,013) |  |  |  |
|--------------------------------|-----------------------------------------------|---|---|---|
|                                | No UIA (n= 1,918) | Other diagnosis (n= 391) | p-value | Stroke/ TIA (n= 82) | Other diagnosis (n= 13) | p-value |
| Mean age (SD)                  | 69.0 (14.0) | 60.4 (17.3) | <0.0001 | 71.2 (12.4) | 65.2 (15.1) | 0.12 |
| Male sex (%)                   | 802 (52.5) | 177 (45.3) | 0.010 | 28 (34.1) | 2 (15.4) | 0.18 |
| Caucasian (%)                  | 1441 (94.4) | 358 (91.6) | 0.046 | 79 (96.3) | 12 (92.3) | 0.45 |
| Hypertension (%)               | 822 (53.8) | 153 (39.1) | <0.0001 | 56 (68.3) | 4 (30.8) | **0.009** |
| Diabetes mellitus (%)          | 201 (13.2) | 38 (9.7) | 0.066 | 10 (12.2) | 2 (15.4) | 0.75 |
| Hyperlipidemia (%)             | 508 (33.3) | 100 (25.6) | 0.0040 | 22 (26.8) | 5 (38.5) | 0.39 |
| Current smoker (%)             | 216 (14.1) | 49 (12.5) | 0.41 | 17 (20.7) | 2 (15.4) | 0.65 |
| Atrial fibrillation (%)        | 228 (14.9) | 33 (8.4) | 0.001 | 9 (11.0) | 0 (0) | 0.21 |
| Any vascular disease§ (%)      | 408 (26.7) | 102 (26.1) | 0.80 | 24 (29.3) | 2 (15.4) | 0.30 |
| History of stroke or TIA (%)   | 210 (13.8) | 53 (13.6) | 0.92 | 14 (17.1) | 2 (15.4) | 0.88 |
| PVD (%)                        | 88 (5.8) | 19 (4.9) | 0.49 | 3 (3.7) | 0 (0) | 0.48 |
| IHD (%)                        | 187 (12.2) | 37 (9.5) | 0.13 | 8 (9.8) | 0 (0) | 0.24 |
| Imaging modality               |  |  |  |  |  |  |
| CTA (%)                        | 247 (16.2) | 92 (23.5) | 0.001 | 15 (18.3) | 1 (7.7) | 0.69 |
| MRA (%)                        | 1280 (83.8) | 299 (76.5) | 67 (81.7) | 12 (92.3) | 12 (92.3) | 0.69 |
### Supplementary Table 3: Studies identified by systematic review of the prevalence of unruptured intracranial aneurysms in ischaemic stroke or TIA patients.

| Study       | Location | Sample size | Cohort description                                      | Mean age (years) | Females (%) | Imaging modality | UIA n (%) | UIA outcome                                                                 |
|-------------|----------|-------------|----------------------------------------------------------|------------------|-------------|------------------|-----------|--------------------------------------------------------------------------------|
| Nagashima 1993<sup>1</sup> | Japan    | 2540        | Single centre, investigation of symptomatic CAS           | -                | -           | CA               | 127 (5.0) | 45 (35%) surgically clipped, 5 SAH at mean interval 5.6 years                |
| Griffiths 1996<sup>2</sup>  | UK       | 100         | Single centre, investigation of symptomatic CAS           | 62               | 48          | CA               | 9 (9.0)   | 5 (56%) surgically clipped                                                   |
| Pappada 1996<sup>3</sup>    | Italy    | 389         | Multi-centre, investigation of symptomatic CAS            | 67               | 20          | CA               | 10 (2.6)  | 8 (80%) surgically clipped                                                   |
| Kann 1997<sup>4</sup>       | USA      | 209         | Single centre, investigation of symptomatic CAS           | 68               | -           | CA               | 10 (4.8)  | -                                                                             |
| Kappelle 2000<sup>5</sup>   | USA      | 2885        | Symptomatic CAS patients recruited to NASCET             | 66               | 30          | CA               | 90 (3.1)  | 8 (9%) surgically clipped. 1 SAH during mean follow-up 5 years              |
| Ballotta 2006<sup>6</sup>   | Italy    | 474         | Single centre, investigation of symptomatic CAS           | 72               | -           | CA               | 11 (2.3)  | No intervention and no SAH during mean follow-up 5 years                     |
| Heman 2009<sup>7</sup>      | Netherlands | 194         | Single centre, investigation of symptomatic CAS           | 70               | 34          | CTA              | 8 (4.1)   | -                                                                             |
| Ishikawa 2010<sup>8</sup>   | Japan    | 374         | Single centre, IS inpatients                             | 70               | 38          | MRA              | 13 (3.5)  | No SAH in 3 months follow-up                                                |
| Edwards 2012<sup>9</sup>    | USA      | 236         | Single centre, IS pre-thrombolysis work-up                | -                | -           | CTA/ MRA         | 19 (8.1)  | 1 (5%) SAH 24 hours after thrombolysis                                       |
| Kim 2012<sup>10</sup>       | Korea    | 194         | Single centre, thrombolysed IS patients                  | 70               | 39          | CTA/ MRA         | 6 (3.1)   | -                                                                             |
| Study            | Country | N    | Setting                      | CTA/MRA | SAH | Follow-up Details                                      |
|------------------|---------|------|------------------------------|---------|-----|--------------------------------------------------------|
| Sheth 2012       | USA     | 172  | Single centre, IS inpatients | 62      | 53  | 8 (4.7)                                                |
| Mittal 2013      | USA     | 105  | Single centre, IS pre-thrombolysis work-up | 69      | 44  | 10 (9.5) No SAH in mean follow-up 18 months          |
| Oh 2013          | Korea   | 314  | Single centre, IS inpatients | 66      | 39  | 19 (6.1) No intervention. No SAH in mean follow-up 2 years |
| Goyal 2015       | International | 1398 | Multi-centre, IS pre-thrombolysis work-up | -       | -   | 42 (3.0)                                                |
| Kim 2016         | Korea   | 955  | Single centre, IS inpatients | 65      | 39  | 74 (7.7) 8 (12%) patients surgically clipped, 3 SAH in mean follow-up 18 months |
| Zibold 2016      | Germany | 300  | Single centre, IS patients receiving EVT | 70      | 46  | 11 (3.5)                                                |
| Doyle 2018       | USA     | 176* | Single centre, IS inpatients | 68      | 51  | 5 (2.8)                                                 |
| Kanesa-Thasan    | USA     | 225  | Single centre, IS endovascular therapy candidates | 65      | 53  | 16 (7.1)                                                |
| Chen 2018        | USA     | 1541 | Single centre, IS inpatients | 66      | 49  | 176 (11.4)                                              |

UIA = unruptured intracranial aneurysm, CAS = carotid artery stenosis, IS = ischemic stroke, CA = catheter angiography, CTA = computed tomography angiography, NASCET = North American Symptomatic Carotid Endarterectomy Trial, SAH = subarachnoid hemorrhage; EVT = endovascular thrombectomy.

*p=patients with intracranial vascular imaging, demographics relate to whole cohort (n= 200)
**Supplementary Figure 1:** Flow diagram of systematic review inclusion/exclusion for prevalence of unruptured intracranial aneurysms in TIA/stroke patients and Ovid MEDLINE and Embase search terms.

**Embase search terms**
1. exp intracranial aneurysm/
2. (intracranial adj3 aneurysm).ti,ab.
3. berry aneurysm.mp.
4. saccular aneurysm.mp.
5. 1 or 2 or 3 or 4
6. Prevalence/
7. Prevalen*.ti,ab.
8. 6 or 7
9. 5 and 8

**Ovid MEDLINE search terms**
1. intracranial aneurysm/
2. (intracranial adj3 aneurysm).ti,ab.
3. berry aneurysm.mp.
4. saccular aneurysm.mp.
5. 1 or 2 or 3 or 4
6. Prevalence/
7. Prevalen*.ti,ab.
8. 6 or 7
9. 5 and 8

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Studies identified using Ovid MEDLINE and Embase electronic databases (since inception)  
(n=1,483)  

Excluded (n=1,456)  
Abstracts were not relevant, reviews, conference abstracts, case reports, duplicates or did not report prevalence.

Papers and references reviewed  
(n=27)  

Excluded (n=8)  
Asymptomatic carotid stenosis cohort (n=5), duplicate cohort (n=1), unruptured aneurysm cohort (n=1), systematic review (n=1).

Included in systematic review  
(n=19)
Supplementary Figure 2: Prevalence of patients with unruptured intracranial aneurysms categorized by the number of risk factors (female sex, hypertension and current smoker); P<0.0001
**Supplementary Figure 3:** Proportion of patients with UIA categories in 10-year age bands.
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