

**Supplementary Table 1.** Demographic and cerebrovascular characteristics of the pooled and matched cohorts

| Characteristic                              | Pooled cohort              |                    |         | Matched cohort                     |                          |         |        |
|---|----------------------------|--------------------|---------|------------------------------------|--------------------------|---------|--------|
|   | Cirrhotic patients (n=993) | Controls (n=6,099) | P-value | Matched cirrhotic patients (n=755) | Matched controls (n=755) | P-value | STD    |
| Cerebrovascular risk factors                |                            |                    |         |                                    |                          |         |        |
| Age (years)                                 | 53.3±8.0                   | 56.3±8.6           | <0.001  | 53.3±8.0                           | 53.6±9.7                 | 0.729   | 0.019  |
| Male sex                                    | 764 (76.9)                 | 3,869 (63.4)       | <0.001  | 641 (75.2)                         | 648 (76.0)               | >0.999  | 0.003  |
| Family history of cerebrovascular disease   | 61 (6.1)                   | 1,789 (29.3)       | <0.001  | 21 (2.5)                           | 21 (2.5)                 | 0.581   | 0.033  |
| Smoking status                              |                            |                    | <0.001  |                                    |                          | 0.680   | 0.048  |
| Never                                       | 437 (44.0)                 | 3,092 (50.7)       |         | 340 (45.0)                         | 335 (44.4)               |         |        |
| Current                                     | 132 (13.3)                 | 1,059 (17.4)       |         | 301 (39.9)                         | 294 (38.9)               |         |        |
| Former                                      | 424 (42.7)                 | 1,948 (31.9)       |         | 114 (15.1)                         | 126 (16.7)               |         |        |
| BMI (kg/m <sup>2</sup> )                    | 21.6±3.7                   | 24.2±2.8           | <0.001  | 22.6±3.2                           | 22.6±3.3                 | 0.824   | 0.009  |
| Hypertension                                | 335 (33.7)                 | 2,444 (40.1)       | <0.001  | 252 (33.4)                         | 233 (30.9)               | 0.317   | 0.053  |
| Diabetes                                    | 253 (25.5)                 | 703 (11.5)         | <0.001  | 156 (20.7)                         | 151 (20.0)               | 0.798   | 0.015  |
| Hyperlipidemia                              | 9 (0.9)                    | 1,369 (22.4)       | <0.001  | 9 (1.2)                            | 9 (1.2)                  | >0.999  | <0.001 |
| Presence of cervicocephalic atherosclerosis |                            |                    |         |                                    |                          |         |        |
| Overall stenosis*                           |                            |                    |         |                                    |                          |         |        |
| Intracranial atherosclerosis                | 24 (2.4)                   | 367 (6.0)          | <0.001  | 17 (2.3)                           | 41 (5.4)                 | 0.002   | -      |
| Middle cerebral artery                      | 13 (1.3)                   | 164 (2.7)          | 0.013   | 10 (1.3)                           | 17 (2.3)                 | 0.244   | -      |
| Anterior cerebral artery                    | 1 (0.1)                    | 74 (1.2)           | 0.003   | 1 (0.1)                            | 7 (0.9)                  | 0.076   | -      |
| Posterior cerebral artery                   | 2 (0.2)                    | 102 (1.7)          | 0.001   | 2 (0.3)                            | 14 (1.9)                 | 0.006   | -      |
| Basilar artery                              | 3 (0.3)                    | 14 (0.2)           | 0.933   | 1 (0.1)                            | 2 (0.3)                  | >0.999  | -      |
| Distal internal carotid artery              | 12 (1.2)                   | 108 (1.8)          | 0.254   | 9 (1.2)                            | 10 (1.3)                 | >0.999  | -      |
| Extracranial atherosclerosis                | 47 (4.7)                   | 506 (8.3)          | <0.001  | 33 (4.4)                           | 44 (5.8)                 | 0.242   | -      |
| Internal carotid artery                     | 22 (2.2)                   | 295 (4.8)          | <0.001  | 15 (2.0)                           | 28 (3.7)                 | 0.063   | -      |
| Vertebral artery                            | 24 (2.4)                   | 225 (3.7)          | 0.054   | 18 (2.4)                           | 23 (3.0)                 | 0.527   | -      |
| Common carotid artery                       | 4 (0.4)                    | 62 (1.0)           | 0.091   | 2 (0.3)                            | 5 (0.7)                  | 0.449   | -      |
| Severe stenosis <sup>†</sup>                |                            |                    |         |                                    |                          |         |        |
| Intracranial atherosclerosis                | 3 (0.3)                    | 74 (1.2)           | 0.016   | 3 (0.4)                            | 6 (0.8)                  | 0.504   | -      |
| Extracranial atherosclerosis                | 4 (0.4)                    | 73 (1.2)           | 0.038   | 2 (0.3)                            | 4 (0.5)                  | 0.682   | -      |

Values are presented as mean±standard deviation or number (%).

STD, standardized difference; BMI, body mass index.

\*Combined intracranial and extracranial atherosclerosis was found in 8 (0.8%) cirrhotic patients and 96 (1.6%) healthy controls.

<sup>†</sup>Severe intracranial atherosclerosis and severe extracranial atherosclerosis were defined as stenosis ≥50% and ≥70%, respectively, in at least one relevant artery, and severe atherosclerosis involving both intracranial and extracranial vessels was observed in only 7 (0.1%) healthy controls.