Risk factors for intracerebral hemorrhage – results from a prospective population-based study

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Table 1. Hazard ratios for associations with lobar and non-lobar ICH

| | Lobar ICH, age- and sex- adjusted HR (95 % CI) | Lobar ICH, multivariable adjusted* HR (95 % CI) | Non-lobar ICH, age- and sex- adjusted HR (95 % CI) | Non-lobar ICH, multivariable adjusted* HR (95 % CI) |
|---|---|--|---|--|
| Systolic BP, per 10 mmHg | 1.11 (1.01–1.22) | 1.13 (1.02–1.24) | 1.23 (1.14–1.34) | 1.22 (1.12–1.33) |
| Diastolic BP, per 10 mmHg | 1.10 (0.91–1.33) | 1.14 (0.94–1.39) | 1.60 (1.37–1.87) | 1.59 (1.35–1.88) |
| Hypertension | 1.47 (0.94–2.28) | 1.51 (0.97–2.37) | 2.47 (1.60–3.83) | 2.44 (1.57–3.80) |
| Diabetes mellitus | 0.58 (0.19–1.85) | 0.58 (0.18–1.84) | 2.19 (1.24–3.88) | 1.97 (1.10–3.53) |
| Current smoking | 1.55 (1.04–2.31) | 1.57 (1.04–2.36) | 1.16 (0.80–1.67) | 1.20 (0.82–1.75) |
| High alcohol intake | 1.75 (0.81–3.79) | 1.65 (0.76–3.60) | 1.36 (0.66–2.79) | 1.26 (0.61–2.61) |
| Educational level† | | | | |
| Secondary | 1.21 (0.76–1.94) | 1.23 (0.77–1.96) | 1.02 (0.66–1.57) | 1.03 (0.66–1.61) |
| University | 0.68 (0.34–1.35) | 0.71 (0.35–1.42) | 1.10 (0.68–1.78) | 1.21 (0.74–1.98) |
| Living alone | 0.93 (0.60–1.43) | 0.89 (0.58–1.38) | 1.44 (1.01–2.05) | 1.43 (1.002–2.04) |
| BMI ‡ | | | | |
| <18.5 kg/m ² | 1.56 (0.38–6.39) | 1.53 (0.37–6.32) | _ | _ |
| 25–30 kg/m ² | 0.69 (0.46–1.04) | 0.69 (0.46–1.05) | 1.09 (0.77–1.56) | 1.07 (0.75–1.53) |
| >30 kg/m ² | 0.84 (0.48–1.46) | 0.81 (0.46–1.43) | 1.26 (0.78–2.02) | 1.07 (0.66–1.75) |
| Waist circumference § | 0.87 (0.51–1.49) | 0.84 (0.48–1.45) | 1.08 (0.69–1.70) | 0.90 (0.57–1.44) |
| Low physical activity | 1.36 (0.91–2.03) | 1.38 (0.92–2.07) | 0.96 (0.66–1.41) | 1.10 (0.65–1.40) |
| Apolipoprotein A1 (per 10 mg/dL increase) | 0.97 (0.90–1.04) | 0.96 (0.89–1.04) | 0.95 (0.89–1.02) | 0.95 (0.89–1.02) |
| Apolipoprotein B (per 10 mg/dL increase) | 0.95 (0.88–1.03) | 0.94 (0.87–1.02) | 0.99 (0.93–1.05) | 0.97 (0.91–1.04) |
| Use of oral anticoagulants | 7.36 (3.21–16.89) | 8.18 (3.48–19.20) | 1.89 (0.47–7.67) | 1.92 (0.47–7.85) |

ICH, intracerebral hemorrhage; HR, hazard ratio; CI, confidence interval; BP, blood pressure; BMI, body mass index; ApoB, apolipoprotein B; ApoA1, apolipoprotein A1.

^{*} Main model adjusts for age, sex, systolic BP, use of BP-lowering drugs, current smoking, high alcohol intake, use of oral anticoagulants, diabetes mellitus, BMI and living alone. ApoA1 and ApoB also adjusted for lipid-lowering drugs. Diastolic BP not adjusted for systolic BP. Waist circumference not adjusted for BMI.

- † Secondary (10–12 years) and university (>12 years) education compared to primary education (<=9 years).
- ‡ Compared to reference group (18.5–25 kg/m²)
- $\S~4^{\text{th}}$ compared to 1^{st} sex-specific quartile.