

Intracerebral hemorrhage epidemiology

Intracerebral hemorrhage (ICH) has an overall **incidence** of 24.6 per 100,000 person-years and is associated with a high case fatality. Understanding the risk factors for ICH occurrence informs primary prevention strategies.

Intracerebral hemorrhage was present in a substantial proportion of patients with **aneurysmal subarachnoid hemorrhage** and contributed significantly to a high rate of poor **outcomes** and **death**. Higher **systolic blood pressure**, worse **World Federation of Neurosurgical Societies grading for subarachnoid hemorrhage**, and **ruptured middle cerebral artery aneurysms** were independently associated with **Intracerebral hemorrhage** on admission ¹⁾

Poon et al. searched Ovid Medline (from 1980 to Oct 2014) for systematic reviews that addressed the **epidemiology** of ICH and for recent original studies that revealed new insights into the frequency of and the risk factors associated with ICH.

The incidence of ICH has not changed over the last 30 years, and this consistency is thought to be due to changes in the risk factor profiles of ICH patients. It appears that ICH is more common in men and during the winter months. ICH affects Asian populations more frequently than other populations. In addition to the known risk factors of hypertension and increasing age, alcohol consumption, the presence of the apolipoprotein ε2 or ε4 allele, extremes of body mass index, diabetes, and ophthalmic conditions have been suggested to be associated with ICH. Factors associated with a reduced risk of ICH include hypercholesterolemia and a diet high in fruits and vegetables.

The overall incidence of ICH has remained unchanged, but its regional incidence varies by race, sex, season, and geographical location. In high-income countries, the beneficial effect of improving blood pressure control may be counterbalanced by the increased use of antithrombotic drugs. Emerging modifiable risk factors include alcohol consumption, body mass index, diabetes, and fruit and vegetable intake, all of which may be amenable to interventions for the primary prevention of ICH (as well as many other diseases) ²⁾.

An intracerebral hemorrhage causes 15% of **strokes** annually in the **United States**, and there is currently no effective therapy.

A systematic review of epidemiological studies reported intracerebral hemorrhage (ICH) incidence and mortality as unchanged over time; however, comparisons between studies conducted in different health services obscure assessment of trends.

Overall and fatal ICH rates have fallen in a large Australian population. Improvements in cardiovascular prevention and acute care may explain declining rates. There was no evidence of an increase in devastated survivors because the longer term mortality of 30-day survivors has not increased over time ³⁾.

The characteristics of [intracerebral hemorrhage](#) in Southeast Asian countries are insufficiently represented in the literature despite a large proportion of new [stroke](#) cases and deaths.

On et al. from [Brunei](#), aimed to report the [intracerebral hemorrhage epidemiology](#) and clinical presentation of intracerebral hemorrhage in Brunei Darussalam and investigate its incidence according to [sex](#) and [age](#), as well as in relation to clinical presentation, radiological findings, and prognostic factors.

This [retrospective study](#) of intracerebral hemorrhage admissions was conducted from 1 January 2016-31 December 2019. Crude incidence rates were calculated by age and sex. Patient characteristics/demographics, mortality, and functional outcomes were analyzed. Multivariate Cox regression models were used for investigating predictors of mortality.

The study [cohort](#) consisted of 255 patients (median age, 52 years); most were men (64.3% [164/255]) and had hypertension (76.9% [196/255]). The annual incidence rate was 14.6 per 100,000 (95% confidence interval, 12.9-16.5), and incidence rates were higher in men than in women for all age groups. A 7-day and 30-day mortality rate of 22.7% and 31.4%, respectively, was reported. Increased 30-day mortality was associated with patients on dialysis, diabetes mellitus, Glasgow Coma Scale score ≤ 8 , bilateral dilated pupils, higher international normalized ratio, hematoma in the cerebellum or brainstem, hematoma volume, and presence of an [intraventricular hematoma](#).

This study provided insight into several aspects of the burden of intracerebral hemorrhage in Brunei Darussalam where an increasing incidence trend in men was observed. Intracerebral hemorrhage is associated with significant mortality and severe disability, and hypertension remains a significant risk factor ⁴⁾.

1)

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Last update: **2024/06/07 03:00**

