

Spontaneous intracerebral hemorrhage case series

see also [Basal ganglia hemorrhage case series](#).

2024

The incidence of [spontaneous intracerebral hemorrhage](#) (ICH) in young people is relatively low; however, it leads to devastating lifelong neurologic deficits. Jang and Park focused on spontaneous ICH occurring in young adults between 30 and 50 years of age.

They retrospectively reviewed the records of 139 patients, aged 30-50 years, diagnosed with spontaneous ICH between 2011 and 2021. Cases of ICH attributable to discernible causative lesions were excluded. Demographic data, laboratory results, image findings, and clinical outcome were analyzed.

After exclusions, 73 patients were included in this study. Common characteristics among the study patients included male sex (83.6%), high body mass index (>25 kg/m², 45.8%), smoking history (47.2%), heavy alcohol consumption (30.6%), previously diagnosed hypertension (41.1%), high serum triglyceride level (>150 mg/dL, 33.3%), and microbleeds or white matter changes observed on magnetic resonance images (51.3%). In the multivariate analysis, previously diagnosed hypertension was the sole significant risk factor for cerebral small vessel (OR 7.769, P=0.031). Age, brain stem location, Glasgow Coma Scale score at admission, and hematoma volume were associated with poor outcomes.

[Hypertension](#), [obesity](#), [smoking](#), and [cerebral small vessel disease](#) were important factors associated with non-lesional spontaneous intracerebral hemorrhage in young patients. Radiologic changes corresponding to cerebral small vessel disease appeared in young patients (in their 30s) and they were associated with hypertension¹⁾.

2023

In a [post hoc exploratory analysis](#) of the [ATACH](#) (Antihypertensive Treatment at Acute Cerebral Hemorrhage)-2 trial. Patients with [intracerebral hemorrhage](#) were randomized into intensive [blood pressure](#) lowering ([systolic blood pressure](#), <139 mm Hg) versus standard blood pressure lowering (systolic blood pressure, 140-179 mm Hg) in this study. We compared the demographic characteristics; [hematoma](#) size, location, expansion rate; and clinical outcome based on subjects' [smoking](#) status. Of a total of 914 patients in the trial with known smoking status, 439 (48%) patients were ever smokers (264 current smokers and 175 former smokers). Current and former smokers were younger and more likely to be men. Baseline Glasgow Coma Scale score and initial hematoma [size](#) did not vary based on smoking status. Ever smokers had higher rates of thalamic hemorrhage (42% versus 34%) and intraventricular hemorrhage (29% versus 23%); this rate was highest among former smokers versus current smokers (49% versus 35%, respectively). Ever smokers had a higher rate of hematoma expansion in 24 hours (adjusted relative risk [RR] [95% CI], 1.46 [1.08-1.96]) compared with nonsmokers on multivariate analysis. There was no significant difference in the rate of death and

disability at 90 days between the 2 groups (adjusted RR [95% CI], 1.18 [0.998-1.40]). Conclusions Our analysis demonstrates cigarette smoking as an independent predictor for hematoma expansion. There was no significant difference in death and disability based on smoking status ²⁾.

2022

Among stroke patients, primary intracerebral hemorrhage (ICH) has the highest mortality rate. Expansion of hematoma plays a prognostic role in these patients. Although fluid levels have been shown to predict subsequent hematoma expansion, there are mimics of fluid levels that may confuse interpretation. Ratnayake et al. hypothesized that patients with true fluid levels on head CT have higher hematoma progression rates and worse outcomes compared to patients who have fluid level mimics on CT.

Adult patients presenting with ICH described as a “fluid level” on initial CT interpretation were included. Medical records were reviewed to extract relevant clinical variables. A CAQ-certified neuroradiologist retrospectively determined whether there was a true fluid level or mimic on CT, and then evaluated follow-up CTs for radiologic progression. They compared radiologic progression, mortality, and anticoagulation status between true fluid level patients and fluid level mimics.

Twelve patients were included, 8 with true fluid levels and 4 with radiologic mimics. The true fluid level patients had a significantly higher likelihood of radiographic progression ($p = .014$). Differences in outcome, use of anticoagulation therapy, and average INR were not significant.

A fluid level within intraparenchymal hemorrhage on head CT scan is associated with higher likelihood of intracerebral hemorrhage progression. However, this only applies to true fluid levels, with mimics having a lower likelihood of progression. A careful analysis of potential fluid levels is necessary before assigning prognostic implications ³⁾.

2016

418 consecutive patients admitted with primary lobar hemorrhage or deep ICH to a single tertiary care medical center between January 1, 2000, and October 1, 2012. Data were analyzed on March 4, 2016. Participants were consecutive patients with computed tomographic images allowing ICH volume calculation and MRI allowing imaging markers of small vessel disease (SVD).

The ICH volumes at baseline and within 48 hours after symptom onset were measured in 418 patients with spontaneous ICH without anticoagulant therapy, and hematoma expansion was calculated. Cerebral microbleeds, cortical superficial siderosis, and white matter hyperintensity volume were assessed on MRI. The associations between these SVD markers and ICH volume, as well as hematoma expansion, were investigated using multivariable models.

This study analyzed 254 patients with lobar ICH (mean [SD] age, 75 [11] years and 140 [55.1%] female) and 164 patients with deep ICH (mean [SD] age 67 [14] years and 71 [43.3%] female). The presence of cortical superficial siderosis was an independent variable associated with larger ICH volume in the lobar ICH group (odds ratio per quintile increase in final ICH volume, 1.49; 95% CI, 1.14-1.94; $P = .004$). In multivariable models, the absence of cerebral microbleeds was associated with larger ICH volume for both the lobar and deep ICH groups (odds ratios per quintile increase in

final ICH volume, 1.41; 95% CI, 1.11-1.81; $P = .006$ and 1.43; 95% CI, 1.04-1.99; $P = .03$; respectively) and with hematoma expansion in the lobar ICH group (odds ratio, 1.70; 95% CI, 1.07-2.92; $P = .04$). The white matter hyperintensity volumes were not associated with either hematoma volume or expansion.

In patients admitted with primary lobar or deep ICH to a single tertiary care medical center, the presence of [cortical superficial siderosis](#) was an independent variable associated with larger lobar ICH volume, and the absence of cerebral microbleeds was associated with larger lobar and deep ICHs. The absence of cerebral microbleeds was independently associated with more frequent hematoma expansion in patients with lobar ICH. Boulouis et al., provide an analytical framework for future studies aimed at limiting hematoma expansion ⁴⁾.

1)

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2)

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3)

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