

Association of acute kidney injury with in-hospital outcomes among patients hospitalized for stroke

A nationwide Swiss study, 1998–2022

439,465 stroke hospitalizations • 25 years

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Why this study?

Acute kidney injury (AKI) after stroke is clinically important, but long-term nationwide evidence has been limited.

Clinical context

Stroke

major cause of death
and adult disability

Acute kidney injury

associated with adverse
hospital outcomes

Study aim

To evaluate long-term temporal trends, factors associated with AKI, and clinical outcomes among patients hospitalized for stroke in Switzerland.

1 Temporal trends

How did coded
AKI change
from 1998 to
2022?

2 Associated factors

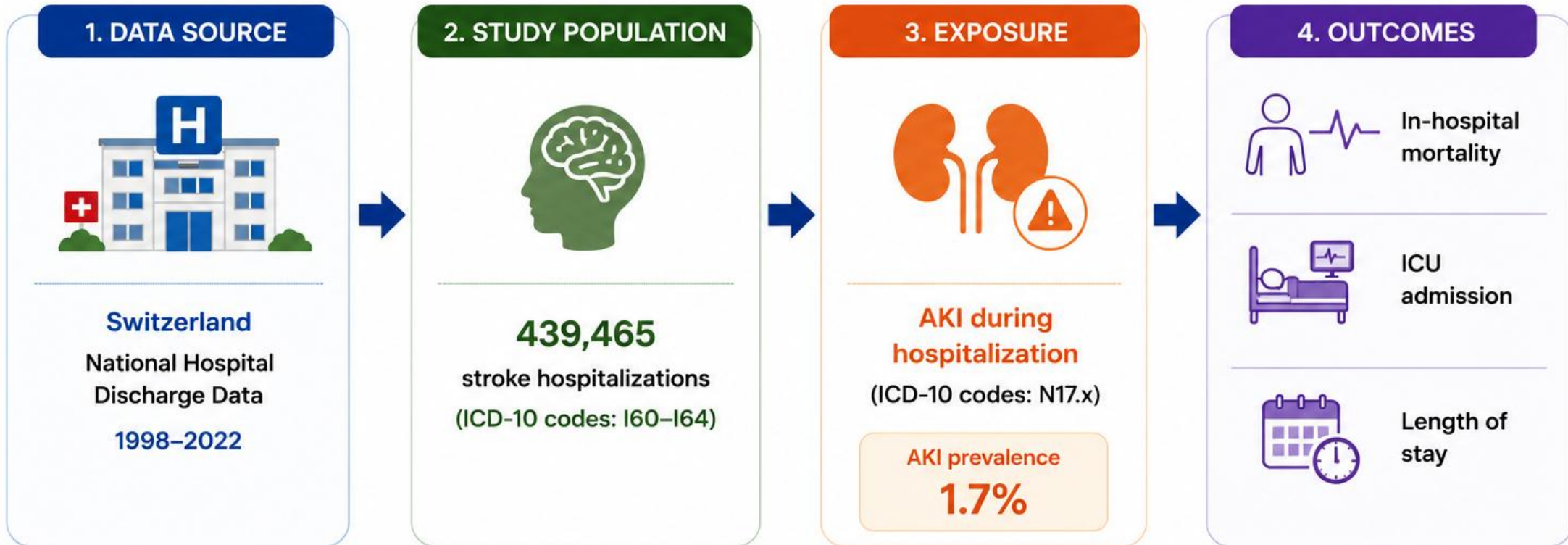
Which patient and
clinical
characteristics were
linked to AKI?

3 Clinical outcomes

Was AKI associated
with ICU use,
length of stay and
mortality?

Nationwide Swiss hospital data

Administrative discharge data covered >98% of Swiss hospitals.



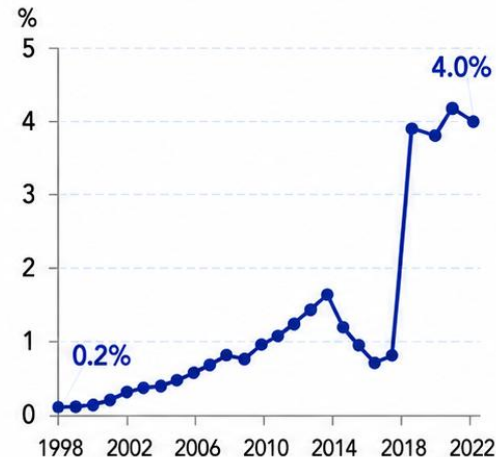
AKI was associated with markedly worse in-hospital outcomes

Adjusted analyses among 439,465 stroke hospitalizations.

1 AKI Trend

AKI occurred in **1.7%** of stroke hospitalizations.

Proportion of stroke hospitalizations with AKI (%)



2 Clinical Outcomes

Outcome (in-hospital)	No AKI (n = 431,791)	AKI (n = 7,674)	Adjusted estimate (95% CI)
ICU admission	17.3%	25.9%	OR 1.62 (1.53–1.71)
ICU length of stay (hours) median [IQR]	32 h [22–69]	51 h [26–135]	β 0.33 (0.28–0.37)
Hospital length of stay (days) median [IQR]	10 days [6–19]	12 days [7–20]	β 0.12 (0.11–0.14)
In-hospital mortality	7.4%	17.0%	OR 2.40 (2.25–2.56)

3 Effect Modification

Strongest associations observed in:



Males



Younger patients



Patients without CKD



Patients requiring dialysis

Take-home message: AKI is a common and clinically important complication across acute cardiovascular conditions.