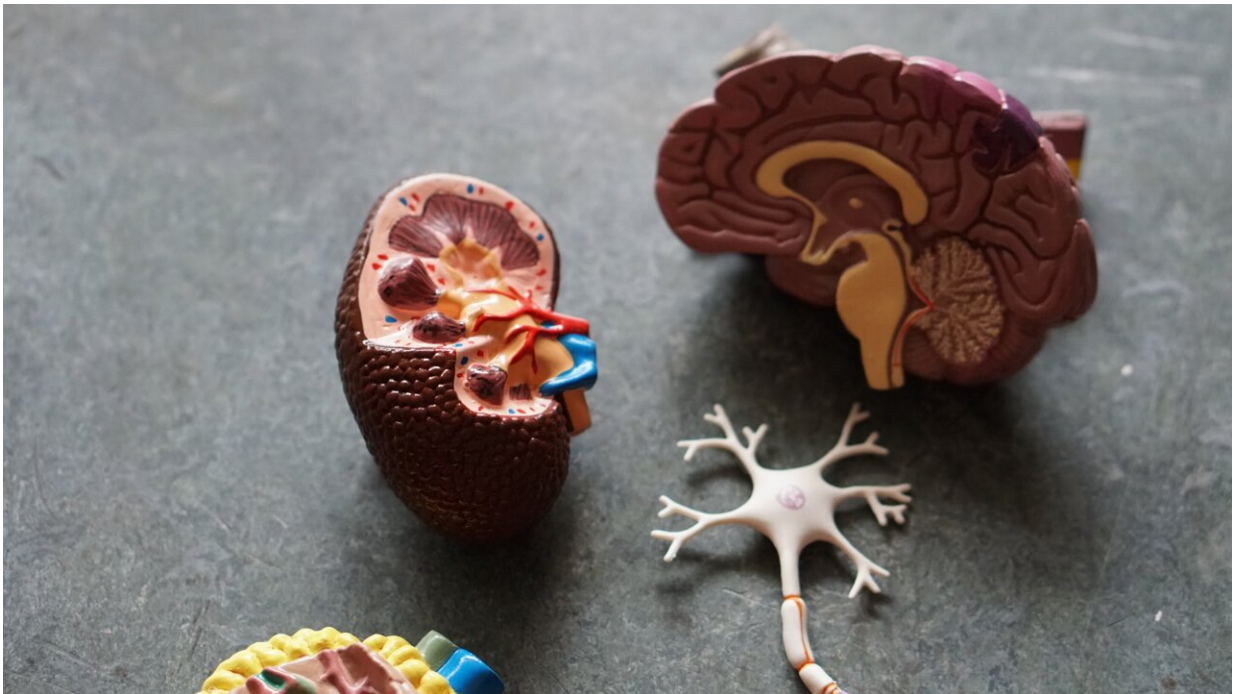


Ischemic stroke in patients with renal impairment

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"The foot bone's connected to the ankle bone," goes the schoolyard song, highlighting the ways in which each part of our body can affect other parts of the body. Now, researchers from Japan have found that the kidney is connected to the heart, in that kidney malfunction is associated with different types of stroke.

In a study published March, in *Neurology*, researchers from the National Cerebral and Cardiovascular Center of Japan (Kinya Otsu, President) found that [patients](#) showing indicators of poor kidney function are more likely to suffer a cardioembolic stroke but less likely to experience small vessel occlusion than patients with normal kidney function.

Chronic kidney disease has a known link to stroke, as patients with impaired [kidney function](#) are twice as likely as healthy individuals to suffer from a stroke. There are several different kinds of stroke, however, and it's unclear whether poor kidney health makes people more susceptible to all types of stroke or favors certain types.

"Other groups have explored the link between [renal impairment](#) and stroke," explains Kaori Miwa, lead author, on behalf of the Japan Stroke Data Bank Investigators. "But the results were inconsistent, with some studies finding no significant association between these two conditions, and some studies showing that there is indeed a connection."

To resolve this controversy, the researchers analyzed [clinical data](#) from over 10,000 individuals from the Japan Stroke Data Bank, a nationwide database of patients with acute stroke. This multicenter hospital-based registry has the advantages of including standardized clinical information, ensuring a valid diagnosis of stroke, and involving acute management by stroke specialists.

"Using such a large and comprehensive database enabled us to definitively show that low filtration rates and high levels of protein in the urine are associated with cardioembolic stroke, while small vessel occlusion was less common compared to other types of stroke," states Masatoshi Koga, second author on the paper.

In addition to the increased risk of cardioembolic stroke, low filtration rate predicted a disability after cardioembolic stroke, and both low

filtration rate and high urine protein levels were linked to a greater chance of dying during hospitalization for stroke.

"Our findings conclusively show that there is a statistically significant association between renal impairment and clinical outcomes after specific ischemic stroke subtypes," states Kazunori Toyoda, senior author on the paper.

Given that almost 10% of the worldwide population suffers from chronic kidney disease, the insights provided by this large-scale study could help predict the risk of stroke and the ultimate prognosis in many of these patients. Understanding what subtype of stroke patients with impaired [kidney](#) function are likely to undergo may be useful for guiding preventive treatment.

The article, "Etiology and outcome of ischemic stroke in patients with renal impairment including [chronic kidney disease](#): Japan Stroke Data Bank," was published in *Neurology*.

More information: Kaori Miwa et al, Etiology and Outcome of Ischemic Stroke in Patients With Renal Impairment Including Chronic Kidney Disease: Japan Stroke Data Bank, *Neurology* (2022). [DOI: 10.1212/WNL.0000000000200153](#)

Provided by National Cerebral and Cardiovascular Center

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