Higher incidence of stroke in patients with dengue fever: Spurious association or causal link?

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A recently published population-based cohort study by Li and colleagues (1) suggests that stroke patients in Taiwan were 2.49 times more likely to have been diagnosed with dengue infection in the preceding two months relative to paired controls. Although rare, dengue-associated stroke does meet the criteria for severe dengue diagnosis based on guidelines from the World Health Organization (2). Li and colleagues report an overall increase in the incidence of stroke attributable to dengue by 1.61 per 1000 person-years during 2015. If these findings are extended to all 43,419 cases of dengue across Taiwan in 2015 (3), then 70 cases of stroke would have occurred due to dengue infection. This is alarming, particularly considering that there are 96 million cases of symptomatic dengue each year worldwide (4). Have the authors identified a spurious association, or is there a genuine causal link between dengue and stroke? Co-morbidity of dengue and hemorrhagic stroke have been reported in 0.26% of cases (3 of 1,148) in India (5), and 0.06% of cases (1 of 1,585) in Brazil (6).

Rigorous research is urgently needed to characterise the sequelae of conditions that may arise from dengue infection, including the severity and duration of underlying disease such as diabetes mellitus and hypertension, conditions that may modify the effect of dengue on the risk of stroke. If the effect of dengue on stroke is acute rather than chronic, then there must be a pathophysiologic mechanism involved. Severe dengue diagnosis under the new classification system presents different and potentially unrelated mechanisms of action (7). In short, more clinical data are needed to support the results of Li and colleagues.

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