Stroke progression is a noteworthy phenomenon. It may manifest radiologically, clinically or as both. Several systemic upheavals contribute including cardiovascular dysregulation, blood glucose disturbances and hyperthermia to name just three. No previous studies, however, have really assessed whether any particular stroke location might be especially prone to progression.

In this retrospective study of 61 consecutive patients innocent of reperfusion therapy, Ay et al2 show that insular infarction is more prone to radiological extension over a median of 7 days (range 4.5 to 52.5 days) than stroke excluding the insular cortex. The contributions of various confounding variables including stroke volume and vascular territory as well as age and admission blood glucose were assessed using linear regression models.

Why is the insular cortex so attractive in this regard? This previously ill-understood region is a significant site of autonomic and nociceptive representation and integration. Insular strokes are associated with an increased risk of adverse cardiovascular outcomes including sudden death3 correlating with stroke-related cardiovascular autonomic abnormalities.4 Additionally, blood glucose dysregulation occurs significantly more frequently with insular stroke location.5 It would therefore be entirely reasonable to infer that insular stroke invokes cardiovascular and endocrine changes that compromise cerebral tissue when at its most vulnerable leading to stroke extension.

However, we do not yet know whether these radiological changes are functionally significant because no clinical assessments were reported. Additionally, whether the mechanistic explanations for stroke extension are relevant to the findings of this study is unclear. The authors did not gather blood glucose, inflammatory or cardiovascular data during follow-up. Therefore, some may question whether the location-related radiological changes are truly important. But if you ask me, there is little doubt in my mind that they are.

Disclosures
None.

References
Plus Ça Change …
Stephen Oppenheimer

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