

# Ischaemic stroke assessment

December 19 2018, by David Bradley

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Non-contrast computed tomography (NCCT) is a low-cost medical imaging technology that is used widely in investigating damage to a patient's brain caused by ischaemic stroke. However, writing in the *International Journal of Image Mining*, researchers from Algeria explain that it is not without limitations. As such, they are developing an

algorithm that can automatically detect ischaemic areas of the brain from CT images within hours of the onset of symptoms using a comparison of the two brain hemispheres.

Yahiaoui Amina Fatima Zahra and Bessaid Abdelhafid of the Department of Biomedical Engineering, at the University of Tlemcen, explain how subtle changes in ischaemia are difficult to visualise and to extract and although there are techniques that allow radiologists to "score" the damage and to make diagnostic decisions regarding thrombolytic treatment there is always room for improvement. Moreover, commonly only patients with a high baseline score benefit from endovascular revascularisation therapy. This could change if there were a better way to assess the CT images quickly.

The team reports that their algorithm has five steps: pre-processing, segmentation of regions of interest, elimination of old infarcts and [cerebrospinal fluid](#) (CSF) space, feature extraction and ASPECTS scoring. They have tested it on 25 patients and found it to be effective in comparison with methods previously reported in the [scientific literature](#) and it shows high sensitivity at almost 91 percent.

**More information:** Yahiaoui Amina Fatima Zahra et al. A promising method for early detection of ischemic stroke area on brain CT images, *International Journal of Image Mining* (2018). [DOI: 10.1504/IJIM.2018.096298](#)

Provided by Inderscience

Citation: Ischaemic stroke assessment (2018, December 19) retrieved 3 May 2024 from <https://medicalxpress.com/news/2018-12-ischaemic.html>

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