APPENDIX

Measures of intracranial compartments in acute intracerebral haemorrhage: data from the Rapid Intervention with Glyceryl Trinitrate in Hypertensive Stroke-2 Trial (RIGHT-2)

Supplemental material

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Figure 1. Example of approximation of intracerebral haemorrhage volume and intracranial volume.
Left panel, ABC/2 method[1]: The longest haemorrhage axial diameter highlighted in green is A; B is the largest diameter perpendicular diameter to A in the same slice; C: C= haemorrhage vertical diameter (number of slices with haemorrhage visible multiplied by slice thickness).
Panel right, XYZ/2 method[2]: X: X=largest diameter of the supratentorial brain; Y= the longest perpendicular diameter to 'X' in the axial plane; Z=brain vertical diameter.
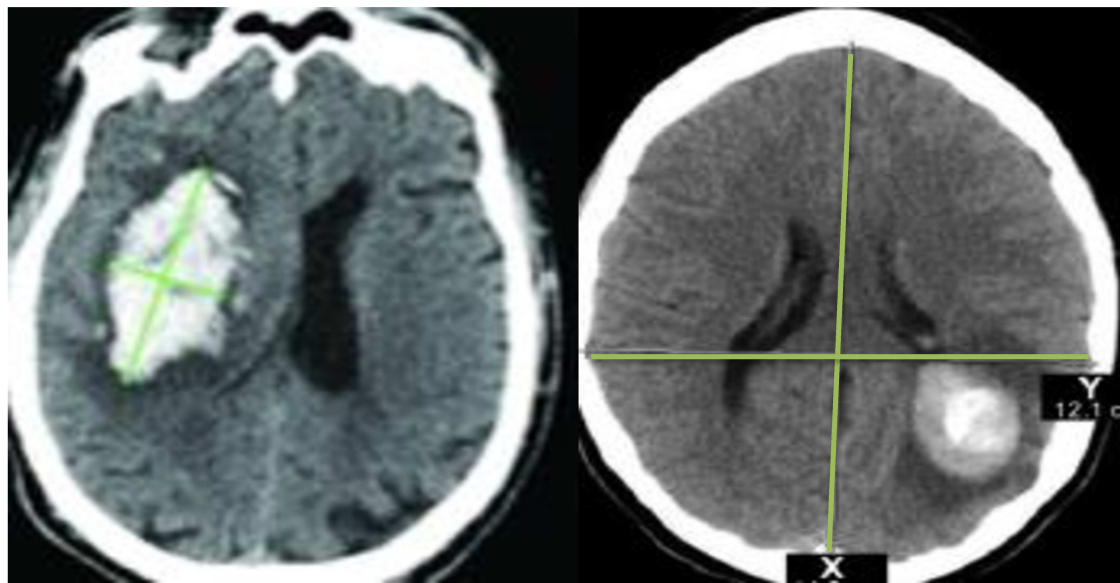
Figure 2. Example of semi-automated segmentation methods using ITK-SNAP software.

Left panel, Intracerebral haemorrhage volume: The highlighted area in green is the segmented haemorrhage from rupture of the right middle cerebral artery. Upper and lower thresholds of density values of ~40-80 Hounsfield units (HU) were used to segment the haematoma from the surrounding brain.

Middle panel, Intracranial volume[3]: The shaded region in green is the intracranial volume segmented using ITK-SNAP software. An upper threshold of attenuation of 200 HU or higher was set to exclude cranial bones and the volume of the region including cerebral hemispheres, cerebellum and brain stem until the foramen magnum was computed.

Right panel, Cerebral Parenchymal Volume[3]: upper and lower thresholds (usually 23 to 100 HU) were established by segmenting the brain parenchyma within the intracranial volume and edited manually to exclude haemorrhage volume. The computed volume displayed in red was 1067 cm^3.
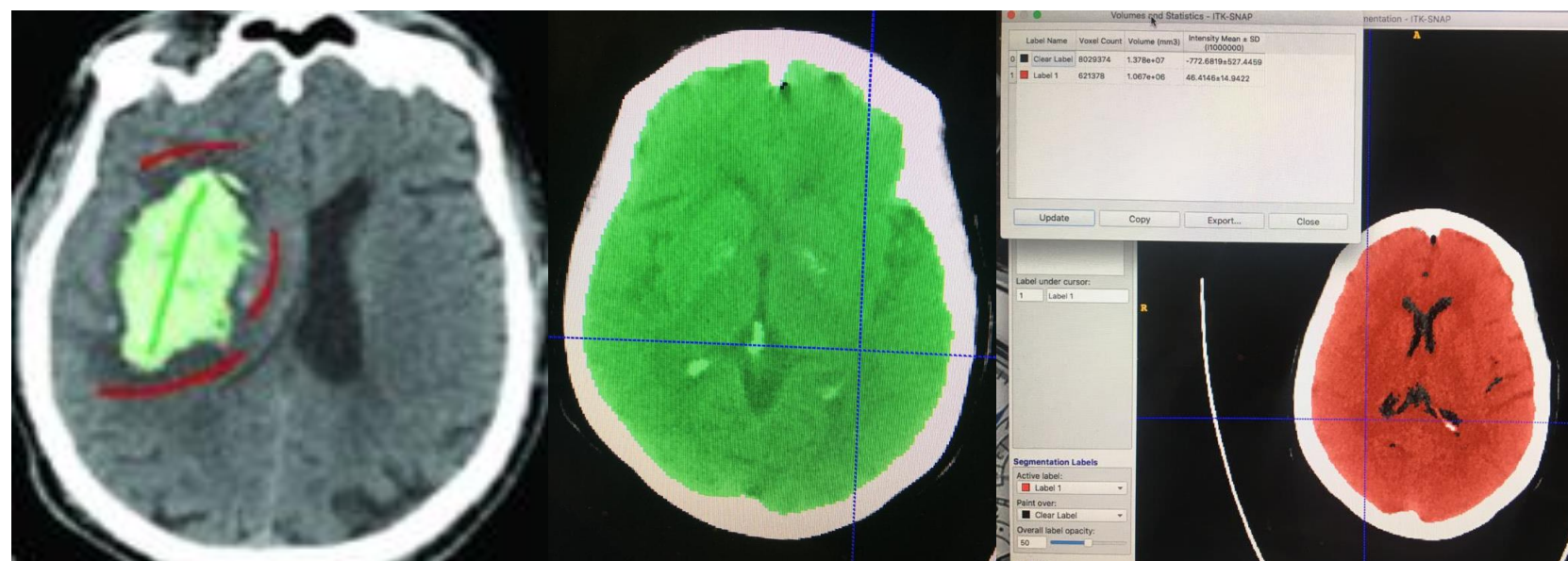
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Figure 3. Example of linear measures of brain atrophy[6] using computer tomography scans from RIGHT-2.

Left panel, Intercaudate distance[6]: The highlighted line in red shows the distance between the caudate heads where they are the closest. The measured intercaudate distance was 16.28 mm.

Right panel, Sylvian fissure ratio[6]: This was calculated as the average of the maximum width of the sylvian fissures on the slice showing them at their widest (shorter white arrowhead) divided by the transpineal coronal inner table diameter (longer arrowhead).
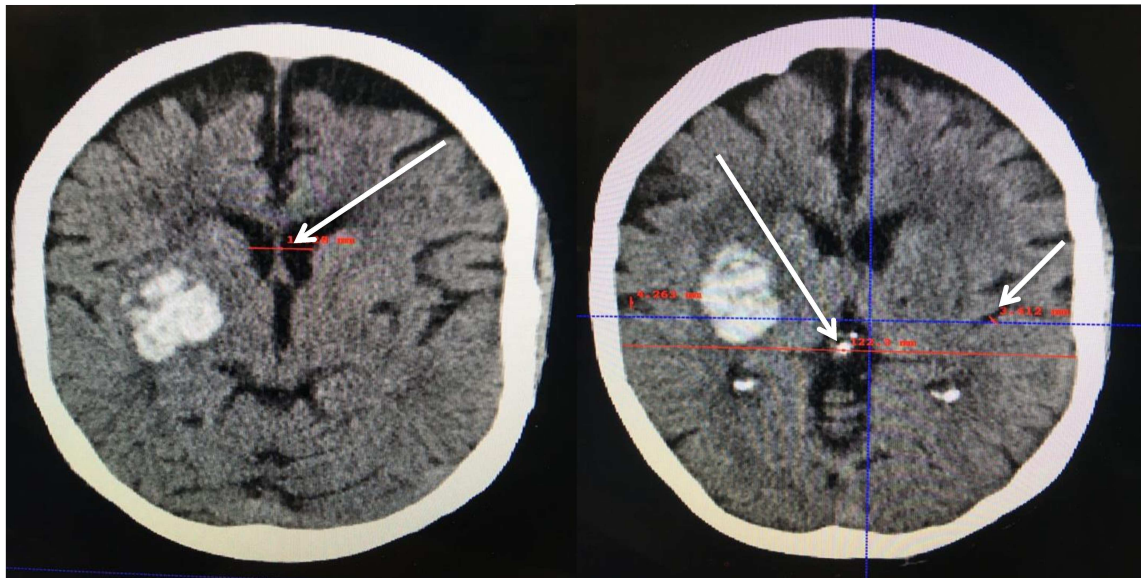
Figure 4. Example of visual assessment of leukoaraiosis and mass effect using the van Swieten score and cistern score respectively.
Left panel, van Swieten score[4]: diffuse hypodense lesions can be seen bilaterally around the ventricles around the semiovale centres extending to the cortex. This was graded as 4.
Right panel, cistern score[5]: The right and left ambient cisterns are visibly obliterated by the presenting right basal haemorrhage extending into the ventricles. A total score of 4 was assigned according to the cistern score.
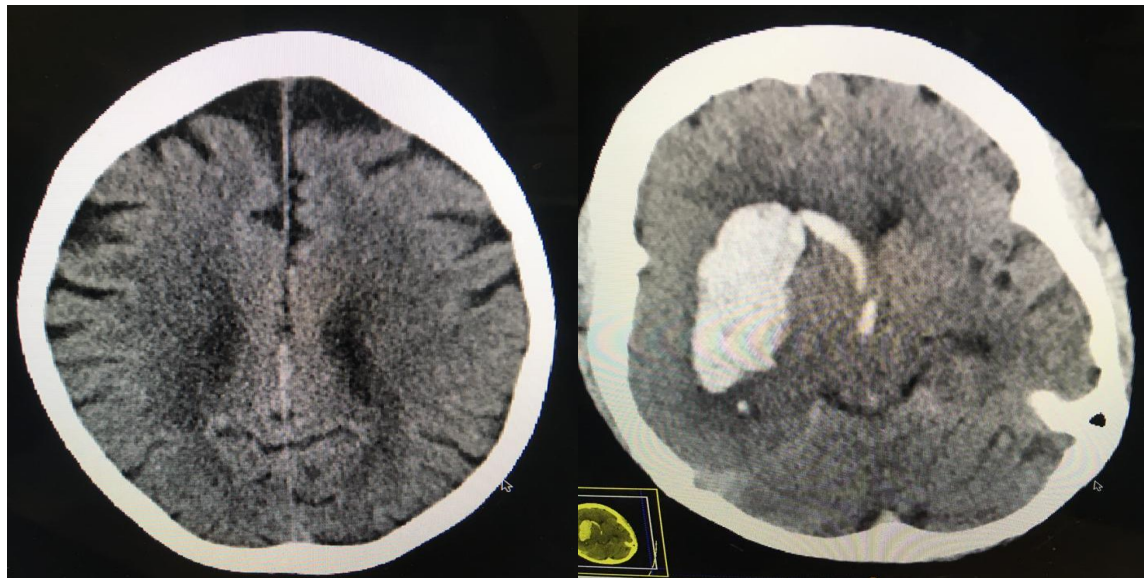
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