RESULTS
The probabilistic template showed less variability in arterial regions between ACA and ACA/MCA zones, but large overlaps between ACA/MCA/PCA and AChA zones when displayed alongside MCA/PCA.

At mid-ventricular and basal-ganglia levels, there was good discrimination between MCA/PCA versus PCA border-zone.

At the thalamic level, the overlap extended to include the MCA zone.

MCA and ACA/MCA or MCA/PCA regions showed large overlap.

ACA/PCA regions overlapped with the PCA zone at the basal-ganglia level.

CONCLUSION
In this sample, watershed region variability was not uniform, in agreement with literature reports2,3,7. Our template reflects variability reported in clinical studies2-7, being promising in voxel-based analyses of brain lesions of stroke patients.

INTRODUCTION
Radiologists need to evaluate anatomical information for clinical diagnoses, therefore computational methods facilitating decision-making are desired1. Knowledge of brain arterial territories and their border zone regions is important to estimate infarct damage2 and to underpin differential diagnosis between haemodynamic watershed and thromboembolic ischemia3.

METHODS
1. Manual Mapping
Brain arterial territories from brain Magnetic Resonance Images of 24 minor cortical stroke patients were manually delineated.

2. Generation of a Probabilistic Template
The major cerebral arteries (Anterior, Middle, Posterior) (ACA, MCA, PCA), the anterior choroidal artery (AChA) and their border-zone (watershed) regions were mapped onto T1-weighted axial slices guided by literature information3-6, radiological knowledge and stroke lesions appearance on aligned FLAIR and diffusion-weighted images. Results allowed construction of a probabilistic template.

3. Stroke lesion delineation onto FLAIR Images
On 264 separate FLAIR images, stroke lesions were delineated to construct probability distribution maps.

4. Quantitative and Visual Evaluation
Using the original 24 territory maps, the extension, distribution pattern and frequent of each stroke subtype was evaluated.

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