



## O-039 - ANEURYSMAL SUBARACHNOID HAEMORRHAGE: VOLUMETRIC QUANTIFICATION OF THE BLOOD DISTRIBUTION PATTERN TO ACCURATELY PREDICT THE RUPTURED ANEURYSM LOCATION

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### Resumen

**Introduction:** In spontaneous subarachnoid haemorrhage (SAH) accurate determination of the bleeding source is paramount to guide treatment. Traditionally, the bleeding pattern has been used to predict the aneurysm location.

**Objectives:** Here, we have tested a software-based tool, which quantifies the volume of intracranial blood and stratifies it according to the regional distribution, to predict the location of the ruptured aneurysm.

**Methods:** A consecutive series of SAH patients admitted to a single tertiary centre between 2012 and 2018, within 72h of onset, harbouring a single intracranial aneurysm. A semi-automatized method of blood quantification, based on the relative density increase, was applied to initial non-contrast CTs. Five regions were used to define the bleeding patterns and to correlate them with aneurysm location: perimesencephalic, interhemispheric, right/left hemisphere and intraventricular.

**Results:** 68 patients were included for analysis. There was a strong association between the distribution of blood and the aneurysm location ( $p < 0.001$ ). In particular: ACom and interhemispheric fissure ( $p < 0.001$ ), MCA and ipsilateral hemisphere ( $p < 0.001$ ), ICA and ipsilateral hemisphere and perimesencephalic cisterns ( $p < 0.001$ ), PCom and hemispheric, perimesencephalic and intraventricular ( $p = 0.019$ ), and PICA and perimesencephalic and intraventricular ( $p = 0.900$ ) for these locations.

**Conclusions:** Regional automatized volumetry seems a reliable and objective tool to quantify and describe the distribution of blood within the subarachnoid spaces. This tool accurately predicts the location of the ruptured aneurysm; its use may be prospectively considered in the emergency setting when speed and simplicity are attained.