

## The Combined Role Of CT And MRI In The Diagnosis Of Cerebral Amyloid Angiopathy

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**Aim:** The objective of this study is to evaluate the value of CT and MRI for the diagnosis of Cerebral Amyloid Angiopathy (CAA) in a living patient using Modified Boston Criteria, as the reference standard. Our aim is also to study certain features of Cerebral Amyloid Angiopathy - related intracerebral haemorrhage (CAA-ICH) in comparison to hypertensive - related intracerebral haemorrhage (HTN-ICH) on imaging.

**Material and Methods:** From January 2012 till December 2015, 31 patients admitted to UKMMC for primary intracerebral haemorrhage with both CT and MR imaging done, were investigated retrospectively for the diagnosis of CAA-ICH or HPT-ICH. Interrater agreement was calculated and features of both CAA-ICH and HPT-ICH were recorded for assessment.

**Results:** Using Modified Boston criteria as reference standard, good interrater agreement was achieved using Cohen's Kappa coefficient with  $\hat{\rho}$  of 0.664 in the diagnosis of in vivo CAA-ICH (n=9) and HPT-ICH (n=17). The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were 100%, 77.3%, 64.3% and 100% respectively. Patients in CAA-ICH group were older with range of age between 70-79, compared with the HTN- ICH patients. The bleeds were all superficially located with frontal lobe (44.4%) predominant; majority of the cases (66.7%) have small volume of hemorrhage < 30mls, according to ICH scoring. SAH and IVH extension was seen in 11.1% and 22.2% respectively, in comparison with the HPT-ICH with percentage of 11.8% and 35.8%, respectively. 22.2% had multiple hemorrhages at different lobes and 33.3% had recurrent hemorrhage.

**Conclusions:** A modified Boston criteria with combined CT and MR imaging is a reliable, non-invasive method for diagnosis of premortem CAA-ICH with good interrater agreement. There are certain CT and MRI features to some extent that may assist to distinguish CAA-ICH from HTN-ICH.