

CT Perfusion in Cerebellar Stroke: evaluation of perfusion abnormalities

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Background and aim

Acute cerebellar ischemic stroke (ACIS) is characterized by often non-specific clinical signs such as vertigo or postural instability, with neuroimaging playing a pivotal role in assessment in the emergency setting. The aim of this study was to investigate the effectiveness of CTP maps in detecting ACIS.

Materials and methods

Clinical and radiological data of consecutive patients with ACIS assessed with CTP are retrospectively analyzed. Follow-up NECT or MRI was performed to confirm the diagnosis of ACIS. The effectiveness of the individual CTP maps (MTT, CBF, TTP, and CBV) in identifying the ischemic area were evaluated.

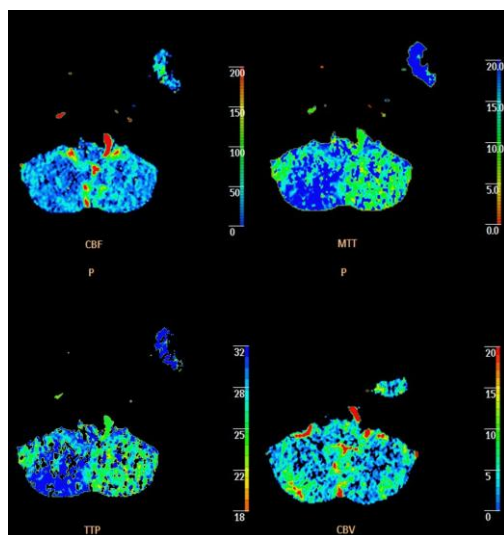
Results

The median age of the cohort was 76 (75-84) and the median NIHSS at admission was 4 (2-7). An ischemic lesion was detected in NECT at admission in 5 patients (25%) and an arterial occlusion was detected in 15 patients (75%) in CTA. CTP was found to be altered at least in one CTP map in 16 of 20 ACIS (80%). MTT proved to be the most sensitive to detecting perfusion abnormalities.

Table 1. Radiological characteristics

n= 20	
Positive NECT [n(%)]	5 (25)
pc-ASPECT	10 (10-10)
Positive CTP [n (%)]	16 (80)
Lesion volume CTP	
Total	31.3 (17.9-35.8)
Core	11.6 (3.7-13)
Penumbra	20.6 (7.6-21.1)
CTP maps analysis	
MTT alteration	16 (80)
CBV alteration	12 (60)
CBF alteration	13 (65)
TTP alteration	12 (60)
Positive CTA [n (%)]	15 (75)
Location	
PICA	8 (40)
AICA	1 (5)
SCA	6 (30)

Figure 1. CTP abnormalities in acute cerebellar ischemic stroke



Conclusions

CT Perfusion can be a valuable tool for detecting acute cerebellar stroke, demonstrating a higher positivity rate than NECT alone or CTA. These findings contribute to the growing body of evidence supporting the use of perfusion imaging in acute posterior circulation stroke.