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A subgroup of the eligible study (ultrasound assessment in acute ischemic stroke within three hours): outcome of MCA occlusion

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It has been demonstrated by recent studies that the identification of the presence and site of vessel lesion through neurosonological methods in the acute phase of stroke is a relevant factor in the choice of treatment strategy and in the definition of prognosis. Ultrasound examination of the supra aortic trunks and of the cerebral vessels (TCCD) can guide thrombolytic treatment and monitor vessel recanalization., since individual clinical course has been shown to depend on the speed of recanalization. The ELIGIBLE Study is a multicenter, observational study with the aim of evaluate US investigations in clinical practice within the first 3 hours from stroke onset in order to diagnose the site of the vascular obstruction, to correlate it with outcome, to study the evolution of vessel lesion. Ultrasound evaluation was performed within three hours from stroke onset and at 3-6 h, 24-36 h, at 5 d and at 120 d. Between 89 patients studied at admission 32 were identified to have a stenosis or an occlusion of MCA proximal or distal. Each patient was evaluated for NIHSS and outcome measures: mortality, Barthel Index and modified Rankin scale. Among the 8 pts with proximal MCA occlusions, the vessel early reopened (3-6 h) in 4 cases, with a complete recanalization in the 37.5%. 3 patients, who revealed no signs of recanalization, died within day 5. Among the 10 patients with distal MCA occlusion at TCCD, 6 were recanalized 3-6 h after t-PA (4 completely, 2 partially) and all vessel were completely patent at 3-month follow-up. The NIHSS score improved in all cases with vessel patency restoration. The proximal and distal MCA stenosis showed a different temporal pattern: in the proximal group there were 2 complete recanalizations after 24-36 h, but the NIHSS score did not change with respect to the baseline. In the other cases, the stenosis persisted at 3 months. In the distal group all patients were recanalized at 3 months, and the NIHSS score improved.

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Brain Parenchima Sonography (BPS) as a diagnostic tool in Parkinson disease

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The clinical diagnosis of extrapiramidal dirorders (EP) is a difficult challenge because it has been known that some patients clinically diagnosed to have an idiopathic Parkinson Disease (IPD), at the post-mortem examination had an atypical parkinsonism, like as an Multiple system atrophy (MSA) or a progressive supranuclear palsy (PSP). The clinical differentiation between IPD and atypical parkinsonian syndromes is hard especially in the early phase of the disease, near the onset of symptoms. Both these disorders share rapid disease progression, eye movement abnormalities, poor levodopa response, cognitive impairment, apraxia, pyramidal signs, and dystonia. Neuroimaging (MRI, SPECT, PET) is often not conclusive mainly in early stages and a single method is often not useful for the diagnosis. BPS has several advantages, like wide availability, short investigation times, low costs, and noninvasiveness. This ultrasound method proved to be reliable and sensitive in detecting early signs of nigrostriatal disfunction in many extrapiramidal disorders. We examined 8 patients with clinically diagnosed IPD through internationally accepted criteria (UKPD soc. Brain Bank clinical criteria) (4 males and 4 females, mean age 66,2) and 10 health controls (5 males and 5 females, mean age 62,2). BPS was performed by using a commercially disposable ultrasound system (Sonos 5500). Substantia nigra (SN) echogenicity measurements were performed on axial BPS scans automatically after manually encircling the outer circumference of the SN area. All patients underwent SPECT with I 123 – FP-CIT, compatible for IPD in three cases and undetermined in the other five. The results of mean SN area for both sides were 0,29 cm2 for the patients and 0,10 cm2 for the controls. Statistical significance (t-test) was found for this difference, with p value < 0.05. BPS appears a suitable method for early identification of IPD and the association with other test (eg SPECT) can help to diagnose EP.