First Pass Effect—Thrombus at first sight

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From the Lisbon Stroke Summit, Lisbon, Portugal. 5–6 April 2019.

Abstract

**Background:** In the treatment for acute ischemic stroke, it’s well established that earlier recanalization is associated with better outcome. It has been recently published the concept of the First-Pass-Effect (FPE), defined as achieving complete recanalization with a single pass of the thrombectomy device. This FPE could be a measure for predicting outcome.

**Objectives:** Verify if the FPE could be a predictor of good outcome in the patients treated in our hospital.

**Methods:** We retrospectively collected all the patients submitted to mechanical thrombectomy (MT) in our center in 2017-18. We selected the patients in whom we achieved TICI 3 (Thrombolysis In Cerebral Infarction) and analysed the FPE, the NIHSS improvement and the clinical outcome modified Rankin Scale (mRS) score at 3 months. When 3mo-mRS was not available, the NIHSS decrease ≥ 4 points was used as a surrogate of good outcome. Finally, we verified if the FPE could predict good outcome.

**Results:** During 2017-18 we performed 360 MT’s with recanalization TICI 3 in 113. The FPE was achieved in 63 patients, with faster procedures than in the other group. At 24 hours the FPE group had a greater decrease in NIHSS. At discharge and at 3 months evaluation there were significantly more patients with mRS≤2 in the FPE group.

**Conclusions:** These work shows the importance of fast opening the vessel, ideally in the first pass of the MT device, with patients achieving FPE being more independent. We should consider that in our center we don’t use the TICI 2C score, usually included in the FPE definition. This could have underestimated our results. With the growing experience of the neuro-interventionists and the improvement in devices, we will probably achieve better FPE rates, which would lead to even better outcomes.

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Published: 04 April 2019

Open Access Publication Available at http://ijcnmh.arc-publishing.org

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