

# ABSTRACT

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Thesis Title	<b>Effectiveness and safety od mechanical recanalization of the M2 segment of the middle cerebral artery using retractable stent in patients witch acute ischemic stroke</b>

**Introduction:** The brain depends on supply of energy and oxygen. When an area of the brain is not perfused due to arterial occlusion, irreversible changes occur rapidly. Cerebrovascular accident is one of the common causes of morbidity, disability, and mortality in global population. They are divided into ischemic strokes and hemorrhagic strokes. Roughly 80 – 85% of all strokes are ischemic strokes. Ischemic CMP is treated by systemic thrombolysis and mechanical recanalization.

**Objective:** Aim of our work was to evaluate effectiveness and safety of mechanical recanalization using retrievable stent in M2 section of middle cerebral artery.

**Methods:** Data was collected retrospectively in the Department of Radiology in University Hospital Hradec Králové. We evaluated accessible data from hospital information system and imaging documentation (CT, MR, DSA) during and after the procedure. A group of patients with only occlusion of the M2 section of the middle cerebral artery, treated with mechanical recanalization between July 2015 and February 2021 was selected. The operation was performed in a total of 84 patients. However, data of one patient were not accessible, so 83 patients were included in the final evaluation. We also evaluated patients, in whom a combination of stent-retriever and aspiration thrombectomy was used. Both the technical

and clinical effectiveness of the intervention were evaluated by mRS values. Success rate of the intervention was evaluated by mTICI values.

**Results:** In this study men made up 55,40% and women made up 44,60%. Average age was 71, the youngest patient was 19 years old and the oldest was 100 years old. Overall technical success rate, evaluated by mTICI, regardless of the used instruments was 75,90%. mRS scale was used to evaluate clinical success rate. Good outcome, which are values of 0-2 were in 60,20% cases. A total of 9 patients died, of which 7 died due to ischemic stroke. On control CT examinations, we monitored the extent of ischemia and the incidence of bleeding. Ischemia occurred in 67,1% of cases, meanwhile bleeding in 19,5% of cases.

**Conclusion:** Compared to other scientific works, we proved a very good technical and clinical results in our group. Since the extractions were performed in the M2 section of the middle cerebral artery, a higher proportion of bleeding could be expected due to the higher technical complexity.

**Keywords:** CMP, ischemia, mechanical thrombectomy, middle cerebral artery