Mechanical Thrombectomy in Acute Ischemic Stroke Patients Greater than 90 Years of Age: Experience in 26 Patients in a Large Tertiary Care Center and Outcome Comparison with Younger Patients

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Introduction and Objective

Acute ischemic stroke (AIS) is a significant cause of death and disability in the United States and worldwide. Endovascular thrombectomy devices/techniques have advanced exponentially and have become the standard of care for AIS treatment since the publication of 5 randomized control trials (RCTs) in 2015. Approximately one-third of AIS occur in patients > 80 years old, two yet this patient subgroup has been underrepresented in these trials. Although previous studies have shown advanced age to be an independent predictor of poor outcomes, subsequent studies have found that good outcomes may still be achieved with proper patient evaluation and selection. In the present study, we aim to analyze the feasibility and outcomes of MT for AIS in patients of extreme age (> 90 years old) and compare outcomes to younger patients (60 – 89).

Methods

A retrospective review was performed of patients ≥ 90 years old presenting with AIS who underwent MT between 2010 and 2018.

Results

Of total 453 patients with AIS, 5.74 % (26) were aged 90 or older, and 69.32 % (314) ranged from 60-89 years of age.

There was no significant difference in the percentage of post-procedural sICH (3.85%, 1 vs. 4.14%, 13, p=0.94), peri-procedural ICH/SAH (11.54%, 3 vs. 6.05%, 19, p=0.27), peri-procedural distal emboli (0% vs. 2.87%, p=0.37), peri-procedural vessel dissections (0% vs. 0.96%, p=0.62), or peri-procedural vessel perforations (0% vs. 0.64%, p=0.68).

There was no significant difference in the proportion of individuals with a good TICI score between the groups (88.46%, 23 vs. 87.58%, 275, p=1.00). There was also no significant difference in the proportion of patients who had an improvement of NIH score at the discharge of at least three points (65%, 17 vs. 68.4%, 215, p=0.64), and “good” mRS scores (34.62%, 4 vs. 49.36%, 155, p=0.40). However, there was a significantly decreased mean length of in patients greater than 90 years of age (5.7 days vs. 9 days, p=0.04). There was no significant difference in the proportion of patients who suffered mortality (11.54%, 3 vs. 13.06%, 41, p=0.82).

Age is one of the factors that affect functional outcome following mechanical thrombectomy. Advancements in catheter techniques, technical experience, and great outcomes with mechanical thrombectomy allow for pushing the envelope to deal with age as one of the factors, rather, than an exclusion criterion. Our results show that mechanical thrombectomy is safe and feasible in this age group.

References