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Practices, attitude and perspectives on decompressive hemicraniectomy- A survey of neurologists, neurosurgeons and intensivists in Saudi and the Gulf

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Introduction: Decompressive hemicraniectomy (DH) is an emergency procedure in patients with large middle cerebral artery (MCA) infarctions. It improves survival but may not improve the overall outcome. This creates frequent disagreements between the neurosurgical on one hand and the neurological and/or the critical care teams. In the current survey, we aimed to explore the perspective on DH of each of these specialties to establish common grounds for moving forward.

Methods: An electronic survey was distributed via email and social media groups to members of these specialties in Saudi Arabia and the Gulf countries. Local practices as well as common triggers for referral for DH were explored. The perceived outcomes of these procedures as well as individual impression of what constitutes good clinical outcomes were entertained. Inquiries regarding the patients' population who are unlikely to benefit from the procedure were sought.

Results: 89 physicians participated: 41 (46.1%) neurologists, 34 (38.2%) neurosurgeons and 14 (15.7%) intensivists. The majority of participants have been in practice for over 10 years (47.1%). Nine participants (10.1%) were from the Gulf Council Countries (four neurologists, and five neurosurgeons). Participants are mostly practicing in intermediate volume centers (50 to 150 stroke admissions per year; in 46.6%) or high volume centers (over 150 stroke cases per year; in 38.6%). The number of cases of DH was up to five per year in 58.6%, six to ten in 21.8%, and more than ten cases per year in 19.5%. The most frequent number of cases referred for DH was reported by the neurosurgeons to be over ten per year (in 40.6%) but the majority of neurosurgeons performed five cases or under per year (in 43.8%). Half of the neurosurgeons preferred to be consulted immediately on candidates with large MCA strokes while the rest wanted to be consulted only when radiological (28.1%) or clinical (12.5%) changes occur. The most important referral trigger for DH was clinical changes (76.9% of intensivists, 61.1% of neurologists, and 51.9% of neurosurgeons). In large MCA stroke setting, 29.3% of neurologists saw no value for ICP monitoring vs. 6.3% of neurosurgeons. All the intensivists expressed that ICP monitoring is somewhat (50%) or very valuable (50%) in this setting. The modified Rankin Scale (mRS) cutoff for good clinical outcome was 3 for 73.6% of respondents. Only 7.4% of neurosurgeons and 6.3% of neurologists (but none of the intensivists) thought that mRS-score of 5 could still be considered a good clinical outcome. There was agreement that DH only improves survival (64.4%). A third of the neurologists considered it to improve functional outcome compared to 15.4% of intensivists and 14.8% of neurosurgeons. Among intensivists, 30.8% had the impression that DH is not different from the natural history of large MCA stroke compared to 11.1% of neurosurgeons and 6.1% of the neurologists. There was agreement (66.7%) that patients older than 60 years with involvement of more than one territory should be excluded from DH. Only 7.7% of neurosurgeons excluded patients with dominant hemispheric strokes.

Conclusion: There is a consensus among participants on the timing, indication and exclusions factors for patients with large MCA stroke. Guidelines issued by a committee of the three involved specialties are strongly recommended by our findings.

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