Advances in Neuro-critical Care for Stroke

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CLEAR III

www.thelancet.com Vol389 February11, 2017
**Table**

<table>
<thead>
<tr>
<th>mRS Score</th>
<th>Standard Care (n=42)</th>
<th>MIS Plus Alteplase (n=54)</th>
<th>Standard Care (n=31)</th>
<th>MIS Plus Alteplase (n=25)</th>
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<tbody>
<tr>
<td>mRS score of 0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 (4%)</td>
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<td>mRS score of 1</td>
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<td>0</td>
<td>1 (3%)</td>
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<td>mRS score of 2</td>
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<td>6 (11%)</td>
<td>2 (6%)</td>
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<td>11 (20%)</td>
<td>3 (10%)</td>
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<td>13 (24%)</td>
<td>6 (19%)</td>
<td>3 (12%)</td>
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<td>7 (13%)</td>
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<tr>
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<td>14 (26%)</td>
<td>11 (35%)</td>
<td>10 (40%)</td>
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<td>5 (16%)</td>
<td>2 (8%)</td>
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</table>

MIS = minimally invasive surgery.  
mRS = modified Rankin Scale.
A, BLS and EOT edema volumes for patients separated by treatment group (medical, surgical aspiration only, and surgery plus r-tPA) and trichotomized by order of percent intracerebral hemorrhage (ICH) removed.
Differences in the crude rates (and SE) in mortality, discharge to institutional care, and of a poor outcome stratified by the timing of surgery: within 48 hours (A) and within 72 hours (B).

Outcome after decompressive craniectomy (DC) and medical management.


Literature search flowchart.

Waleed Brinjikji et al. Stroke. 2017;48:2784-2791

FIGURE 1

FIGURE 1. Clustered spreading depolarizations at the termination of intracranial monitoring. This 19-year-old suffered a severe fall and underwent a bifrontal temporal decompressive craniectomy with right frontal contusion evacuation, at which time an electrode strip was placed. Within 6 h after surgery, the patient was following commands with Glasgow Coma Scale of 10T. The following day, spreading depolarizations began recurring in a temporal cluster at intervals of 40-70 min. The patient was then extubated at 37 h postsurgery and intracranial monitors were removed. At the time, ICP was 13 mmHg, CPP was 69 mmHg, temperature was 37.7\degree C, and GCS was 13, yet spreading depolarizations were still recurring. The patient was discharged from intensive care after 4 days and recovered at 6 months to Upper Moderate Disability on the extended Glasgow Outcome Score. This case illustrates discrepancies between ECoG findings and current decision-making based on neurologic examinations, raising provocative questions. Should invasive neuromonitoring have continued? Would outcome have been improved if depolarizations were aggressively treated? Is the purpose of intensive care to treat organic brain dysfunction, or merely to achieve recovery of consciousness? (a) Electrocorticographic recordings from the final hours before electrode strip removal showing recurrent depolarizations spreading from electrode 4 to 2. Lower traces (gray) show full-band traces, including direct-current (DC) potentials; boxes denote spreading depolarizations (SDs). Upper traces show spontaneous activity and its recurrent spreading depression after band-pass filtering (0.5-50 Hz). (b) High-resolution of full-band recording of spreading depolarization denoted by (*) shows spontaneous activity riding on the baseline DC potential. The spontaneous activity becomes depressed at the onset of the negative DC potential and remains depressed after...
FIGURE 2

Spreading depolarization monitoring in neurocritical care of acute brain injury. (a) The face of the Advanced ICU Care of acute brain injury.

FIGURE 4

Spreading depolarization monitoring in neurocritical care of acute brain injury. (a) The face of the Advanced ICU Care of acute brain injury.