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## Background and Overview

**Article Title/Citation:** A Trial of Intracranial-Pressure Monitoring in Traumatic Brain Injury


**Study objectives/purpose:** Hypothesis is that the widely practice of insertion of ICP monitoring devices in TBI leads to better neurological outcome 6 months post severe TBI

**Brief Background:** Attempts to address question of whether or not ICP monitoring affects outcome 6 months after severe TBI

## Methods

**Study design and Methodology:** Multi-centre parallel-group trial with random assignment to an intracranial pressure monitoring group or imaging / clinical exam group

**Patient selection and Enrollment:** Age > 13 with severe TBI, GCS < 8

N=324

**Interventions:** ICP controlled as per protocols. These protocols are supplied and explained in the supplementary appendix.

**Outcome measures/Endpoints:** Composite end point of neuro psychological outcome at 6 months

**Statistical analysis:** Blocked Wilcoxon test.

## Results

**Enrollment & Baseline Characteristics:** Severe TBI with GSC ~ 4. Mostly MVA’s.
Summary of primary & secondary outcomes: No difference in outcomes.

Pertinent figures/diagrams:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pressure-Monitoring Group (N=157)</th>
<th>Imaging-Clinical Examination Group (N=167)</th>
<th>P Value</th>
<th>Proportional Odds Ratio (95% CI)†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients assessed at 6 mo — no. (%)</td>
<td>144 (92)</td>
<td>153 (92)</td>
<td>0.49§</td>
<td>1.09 (0.74–1.58)</td>
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<tr>
<td>Primary outcome‡</td>
<td></td>
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<tr>
<td>Median</td>
<td>56</td>
<td>53</td>
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<tr>
<td>Interquartile range</td>
<td>22–77</td>
<td>21–76</td>
<td></td>
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<tr>
<td>Cumulative mortality at 6 mo — %</td>
<td>39</td>
<td>41</td>
<td>0.60¶</td>
<td>1.10 (0.77–1.57)</td>
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<tr>
<td>GOS-E scale at 6 mo — no. (%)</td>
<td></td>
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<tr>
<td>Death</td>
<td>56 (39)</td>
<td>67 (44)</td>
<td>0.40§</td>
<td>1.23 (0.77–1.96)</td>
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<tr>
<td>Unfavorable outcome</td>
<td>24 (17)</td>
<td>26 (17)</td>
<td></td>
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<tr>
<td>Favorable outcome</td>
<td>63 (44)</td>
<td>60 (39)</td>
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</tbody>
</table>

Author's Discussion and Conclusions

Brief summary of Authors’ main discussion points: ICP monitoring in TBI is widely recommended but poorly studies. In this study, routine insertion of ICP measuring devices to did affect primary outcome.

Author’s conclusions: Routine ICP monitoring in severe TBI needs to be re-addressed.

Your Discussion and Conclusions

Study strengths:
Very well designed. ICP protocols similar to what we do here.

Study limits, weaknesses, Potentials for bias: Lack of clarity on how many folks had EVD’s inserted.
No comment of potential secondary insults pre-hospital care.

Applicability & impact:
Potentially affects SICU patient population
Additional thoughts/Comments: Secondary outcome of health care resource utilization also not affected.

Conclusions and Recommendations: Study recommends that ICP monitoring in severe TBI does not alter outcomes 6 months post injury. Does not lessen health care resource utilization.