Intracranial Pressure Monitoring in Severe Head Injury after Decompressive Craniectomy

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Introduction

Intracranial Pressure(ICP) is defined as the pressure that must be exerted against a needle introduced into the CSF space to prevent the escape of fluid. Intracranial hypertension found in 40%-60% of severe head injuries. It is a major factor in 50% of all fatalities in Severe head injuries.

Objective

To assess whether ICP monitoring is required during early post operative period in Severe head injury patients who underwent decompressive craniectomy

Methods

This is a prospective observational study including patients with severe head injury (GCS=8) between January2012 to December2013. The study population included patients with GCS=8, bilateral intracranial injuries,decompressive craniectomy done on one side, were divided into two groups one with ICP monitoring and another group with no ICP monitoring. Intraparenchymal ICP catheter was used.Various outcomes including increased ICP in post operative period,overall mortality, duration of ICU stay and length of hospital stay were analysed.

Results

A total of 87 patients with decompressive craniectomy for severe head injury,ICP group was 36patients(41.4%) and No ICP group was 51 patients(58.6%).Overall mortality in ICP group was(n=4)11.1% and in No ICP group was(n=17)33.3% .The overall in hospital mortality was significantly higher in No ICP group (adjusted P value is 0.017). Length of ICU and Hospital stay were slightly longer in patients with No ICP group.Persistant significant increased ICP which required ICP lowering drugs and measures in ICP group was seen in 11 patients.(30.5%)

Conclusions

Intracranial pressure monitoring in Severe head injury patients after decompressive craniectomy significantly reduces overall-in hospital mortality rate.Also it identifies the group of patients with high ICP after decompressive craniectomy who needs intense ICP lowering measures.

Learning Objectives

By the conclusion of this session, participants should be able Describe the importance of ICP monitoring in severe head injury patients after decompressive craniectomy.

References

1.J Neurosurg. 2013 Nov;119(5):1248-54. doi: 10.3171/2013.7.JNS122255. Epub 2013 Aug 23.
Intracranial pressure monitoring in severe head injury: compliance with Brain Trauma Foundation guidelines and effect on outcomes: a prospective study.
Talving P, Karamanos E, Teixeira PG, Skiada D, Lam L, Belzberg H, Inaba K, Demetriades D.

2.J Neurosurg. 2013 Nov;119(5):1228-32. doi: 10.3171/2013.7.JNS122131. Epub 2013 Aug 2.
Decreased risk of acute kidney injury with intracranial pressure monitoring in patients with moderate or severe brain injury.
Zeng J, Tong W, Zheng P.

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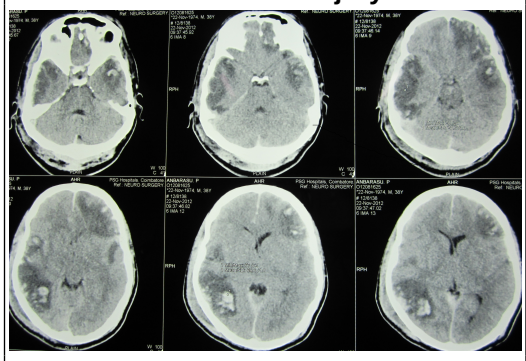

Fig 1 pre-op

Severe head injury

Fig-2 post-op