Amsterdam UMC
University Medical Centers

Amsterdam Neuroscience

Chronic subdural hematoma with mild to moderate symptoms: the effect of initial treatment approach on clinical outcome

Treatment strategy for chronic subdural hematoma

M. Foppen, Department of Neurosurgery, Amsterdam UMC; R. Lodewijkx, Department of Neurosurgery, Amsterdam UMC; dr. K. M. Slot, Department of Neurosurgery, Amsterdam UMC; prof. dr. W.P. Vandertop, Department of Neurosurgery, Amsterdam UMC; prof. dr. D. Verbaan, Department of Neurosurgery, Amsterdam UMC.

Introduction

The effect of a conservative (wait-and-watch) approach in chronic subdural hematoma (cSDH) patients with mild to moderate symptoms, is poorly studied. Surgical evacuation is effective, but inherently carries the risk of surgical or anesthetic complications. This study aims to assess the effect of conservative or operative (burrhole craniostomy) treatment on clinical outcome, in cSDH patients with mild to moderate symptoms

Methods

Setting
Single-center retrospective cohort study
Study period 2012-2022

Patients
444 patients with a cSDH
Mild to moderate symptoms (Markwalder Grading Scale 1 or 2)

Treatment

vs.

Conservative therapy (n=114)
Wait-and-watch

Surgery (n=330)
Burrhole craniostomy

Outcomes
Complication rate
Length of hospital stay
Mortality (30-day)

Statistical analysis
Linear and logistic regression (unadjusted)
Propensity score matching (PSM)
Inverse probability treatment weighting (IPTW)

Analyzed intention-to-treat and as-treated. Effect measure odds ratio (OR) with 95% confidence interval.

Significance of propensity methods

In general, patients with a worse clinical status at diagnosis, tend to receive surgery quicker (bias by indication). Therefore, substantial differences with regard to clinical and radiological characteristics, are present. To adjust for this, propensity score techniques (PSM, IPTW) were used, since they are excellent at correcting for possible bias, in the setting of observational research.

Results

Of the 114 conservatively treated patients, 49 (43%) crossed-over to surgery.

Outcomes per analysis

Intention-to-treat	n=49	**As-treated**
Conservative (n=114)	→	*Conservative (n=65)*
Surgery (n=330)		*Surgery (n=379)*

Complication rate			
Unadjusted	OR: 0.94 (0.54-1.64)	Unadjusted	OR: 0.96 (0.49-2.05)
PSM	OR: 1.39 (0.55-3.49)	PSM	OR: 0.68 (0.20-2.33)
IPTW	**OR: 2.02 (1.04-3.94)**	IPTW	**OR: 2.87 (1.04-7.91)**
Length of stay			
Unadjusted	β: 1.27 (-0.88-3.42)	Unadjusted	**β: 5.51 (2.81-8.20)**
PSM	β: 2.49 (-0.19-5.15)	PSM	**β: 7.95 (4.11-11.79)**
IPTW	**β: 2.34 (0.15-4.52)**	IPTW	**β: 6.62 (3.60-9.64)**
Mortality rate (30-day)			
Unadjusted	OR: 0.50 (0.17-1.43)	Unadjusted	**OR: 0.29 (0.10-0.88)**
PSM	OR: 0.00 (0.00- ∞)	PSM	OR: 0.00 (0.00- ∞)
IPTW	OR: 0.45 (0.14-1.45)	IPTW	**OR: 0.19 (0.06-0.66)**

OR's reflect the effect of surgery as primary treatment. Bold implicates significance.

The higher mortality rate in the conservatively treated group was unrelated to cSDH.

Conclusion

In this selected cohort of cSDH patients with mild to moderate symptoms, a conservative approach was associated with less complications and hospital stay. For these patients, a 'conservative treatment first' regimen may therefore be considered. Corroboration in a prospective cohort with neurological and functional outcomes is warranted.

References
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