# Intraventricular hemorrhage treatment

- Research Progress of External Ventricular Drainage Catheterization Techniques
- Feasibility and efficacy of MEMMAT-like regimen in heavily pretreated adult patients with recurrent malignant embryonal brain tumors: A series of 6 cases
- Impact of Hemorrhage Extent on External Ventricular Drain-Associated Infections in Aneurysmal Subarachnoid Hemorrhage
- Establishment and evaluation of a novel rat model of the fourth ventricle hemorrhage
- 'Father of neonatal neurology': the life of Joseph J. Volpe
- Early treatment versus expectant management of hemodynamically significant patent ductus arteriosus for preterm infants
- Active Cerebrospinal Fluid Exchange vs External Ventricular Drainage in the Neurocritical Care Unit: An International, Retrospective Cohort Study
- Risk factors for the development of hydrocephalus in traumatic brain injury: a systematic review and meta-analysis

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Various medical and surgical modalities have been employed for the management of this entity with variable success and complications rates. Abunimer et al., review the neurosurgical interventions for the management of intraventricular hemorrhage and describe new approaches and potential therapeutic modalities for the management of this devastating condition [1].

Intraventricular hemorrhage management.

## Blood pressure management

The 2007 American Heart Association/American Stroke Association guidelines recommend treating systolic blood pressure (SBP) greater than 180 mm Hg or diastolic blood pressure greater than 105 mm Hg [2].

Target SBP goals ≥ 160 mm Hg are associated with hematoma enlargement compared with SBP goals ≤ 150 mm Hg [3].

Of note, poorly controlled diabetes and SBP greater than 200 mm Hg at admission portend a high risk of hematoma expansion [4].

Early intensive BP-lowering treatment had no clear effect on IVH in acute ICH [5].

## Intraventricular tissue plasminogen activator

see Intraventricular tissue plasminogen activator.

1)
Abunimer AM, Abou-Al-Shaar H, Cavallo C, Mahan MA, Labib MA. Minimally invasive approaches for

the management of intraventricular hemorrhage. J Neurosurg Sci. 2018 May 28. doi: 10.23736/S0390-5616.18.04511-3. [Epub ahead of print] PubMed PMID: 29808639.

2) Broderick J, Connolly S, Feldmann E, et al. Guidelines for the management of spontaneous intracerebral hemorrhage in adults: 2007 update: a guideline from the American Heart Association/American Stroke Association Stroke Council, High Blood Pressure Research Council, and the Quality of Care and Outcomes in Research Interdisciplinary Working Group. Circulation. 2007;116(16):e391–e413. These guidelines for managing ICH form the standard of care for both ICH and IVH

3) Ohwaki K, Yano E, Nagashima H, et al. Blood pressure management in acute intracerebral hemorrhage: relationship between elevated blood pressure and hematoma enlargement. Stroke. 2004;35(6):1364–1367.

4) Kazui S, Naritomi H, Yamamoto H, et al. Enlargement of spontaneous intracerebral hemorrhage. Incidence and time course. Stroke. 1996;27(10):1783–1787.

5) Chan E, Anderson CS, Wang X, Arima H, Saxena A, Moullaali TJ, Delcourt C, Wu G, Wang J, Chen G, Lavados PM, Stapf C, Robinson T, Chalmers J; INTERACT Investigators. Early Blood Pressure Lowering Does Not Reduce Growth of Intraventricular Hemorrhage following Acute Intracerebral Hemorrhage: Results of the INTERACT Studies. Cerebrovasc Dis Extra. 2016 Sep 8;6(3):71-75. [Epub ahead of print] PubMed PMID: 27603933.