

# Idiopathic normal pressure hydrocephalus intracranial pressure monitoring

The diagnosis of [idiopathic normal pressure hydrocephalus](#) can be established with the help of continuous intraventricular pressure recordings (over 24 hours or even longer), since more often than not instant measurements yield normal pressure values. Dynamic compliance studies may be also helpful.

## Case series

An observational cohort study included all patients with iNPH managed at our department during the years 2002-2012 in whom overnight [intracranial pressure monitoring](#) was part of the preoperative work-up. Clinical data were retrieved from a quality registry and ICP scores from a pressure database.

The study included 472 patients, 316 in the surgery group and 156 in the nonsurgery group. Among those treated surgically, 278 (90%) showed clinical improvement (Responders) whereas 32 (10%) had no improvement (Nonresponders). Among Responders, only about one third reached the best clinical scores; moreover, the difference in clinical score between Responders and Nonresponders declined with time after surgery, particularly after 3-4 years. The surgery was accompanied by acute intracranial hematomas in 11 patients (3.5%), of whom 4 (1.3%) died. Survival (age at death) was significantly greater among the Responders than in Nonresponders. Although the static ICP was normal in all patients, the pulsatile ICP was significantly greater in Responders than in Nonresponders.

The pulsatile ICP was greater in shunt Responders than Nonresponders. Although the clinical improvement declined over time and the majority did not experience complete relief of symptoms, shunt Responders lived significantly longer than Nonresponders. The present observations suggest that the current surgical treatment regimens for iNPH (primarily shunt surgery) address only some aspects of the disease process, in particular the aspect of brain water disturbance <sup>1)</sup>.

<sup>1)</sup>

Eide PK, Sorteberg W. Outcome of Surgery for Idiopathic Normal Pressure Hydrocephalus: Role of Preoperative Static and Pulsatile Intracranial Pressure. World Neurosurg. 2016 Feb;86:186-193.e1. doi: 10.1016/j.wneu.2015.09.067. Epub 2015 Sep 30. PubMed PMID: 26428326.

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