



What's new in Hydrocephalus? March 2013!

For this letter we conducted a PubMed literature search on “hydrocephalus” and noted that the total number of publications was 25 613 with over 600 new contributions since our last letter. As stated before we have no ambition to be comprehensive or to make a critical review of what is published, the goal is to illustrate that there are significant research contributions in the hydrocephalus field by acknowledging a few of these articles. We also encourage you as members to make us aware of the articles you publish.

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Normal Pressure Hydrocephalus

The group from Gothenburg have explored the pathophysiology of iNPH by analyzing biomarkers in both ventricular and lumbar CSF.(Jeppsson et al. 2013) From their data that they interpreted that iNPH is characterized by a reduced periventricular metabolism and axonal degeneration but with no major cortical damage.

Lundin and co-workers investigated effect of shunting on metabolites assessed with MR spectroscopy. They found that thalamic tNA and NAA was not normalized, but detected that postoperatively increased tCho and decreased myo-inositol in the frontal deep white matter might relate to clinical improvement.(Lundin, Tisell, et al. 2013b) Lundin et al also studied balance with computerized posturography, they found that the INPH had reduced balance and that it only improved slightly from shunting.(Lundin, Ledin, et al. 2013a)

Inspired by the DESH sign Yamamoto et al from Osaka suggested an index for the severity of brain deformation by calculating ventricular and sylvian fissure volumes divided by the subarachnoid space at high convexity/midline areas.(Yamamoto et al. 2013) They evaluated the index on 16 shunted INHP and found that improvements were larger in patients with milder deformation of the brain before shunt operation, supporting that treatment of INPH patients in the early stage is important.

Qvarlander et al investigated the pulsatility curve in INPH and found support for the hypothesis that amplitude of cardiac related ICP pulsations can be a component of INPH pathophysiology.(Qvarlander et al. 2013)

Idiopathic intracranial hypertension



Pediatric and Obstructive Hydrocephalus.

In a study on 64 infants with congenital idiopathic hydrocephalus in Uganda, investigating long-term success of ETV with or without choroid plexus cauterization (CPC), it was shown that ETV/CPC was significantly more successful than ETV alone. (Warf 2013)

Experimental Hydrocephalus

Economics

In an Australian study they showed that as much as 75% of hydrocephalus related hospital expenditures were used to surgically treat patients for complications or failures.

Shunts

In a large German study Lemcke and colleagues compared gravitational valves with programmable valves with respect to over drainage complications. (Lemcke et al. 2013) They found that implanting a gravitational valve significantly reduced the number of over drainage complications.

In a large prospective Dutch shunt study they randomized between high and low pressure setting on a VP-shunt with anti siphoning device. (Delwel et al. 2013) They found that same improvement and less subdural effusions could be achieved by presetting at the highest opening pressure and lowered until clinical improvement or radiological signs of over drainage occurred.

CSF Dynamics and Measurement techniques

It was shown by Leinonen et al that PET with [18F] Flutemetamol and [11C] PiB could be used to study the presence of amyloid-b pathology in patients with possible NPH. (Leinonen et al. 2013)

References

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