SINPHONI

In SINPHONI—a Japanese multicenter cohort study looking at the validity of MRI findings in idiopathic normal pressure hydrocephalus (iNPH) [1].

Yamada et al evaluated the cerebrospinal fluid tap test as a predictor of improvements following shunt surgery. [2].

Eighty-three patients (45 men and 38 women, mean age 76.4 years) underwent lumboperitoneal shunt surgery, and outcomes were evaluated until 12 months following surgery. Risks for poor quality of life (Score 3 or 4 on the modified Rankin Scale [mRS]) and severe gait disturbance were evaluated at 3 and 12 months following shunt surgery, and the tap test was also conducted. Age-adjusted and multivariate relative risks were calculated using Cox proportional-hazards regression. RESULTS Of 83 patients with iNPH, 45 (54%) improved by 1 point on the mRS and 6 patients (7%) improved by ≥ 2 points at 3 months following surgery. At 12 months after surgery, 39 patients (47%) improved by 1 point on the mRS and 13 patients (16%) improved by ≥ 2 points. On the gait domain of the iNPH grading scale (iNPHGS), 36 patients (43%) improved by 1 point and 13 patients (16%) improved by ≥ 2 points at 3 months following surgery. Additionally, 32 patients (38%) improved by 1 point and 14 patients (17%) by ≥ 2 points at 12 months following surgery. In contrast, 3 patients (4%) and 2 patients (2%) had worse symptoms according to the mRS or the gait domain of the iNPHGS, respectively, at 3 months following surgery, and 5 patients (6%) and 3 patients (4%) had worse mRS scores and gait domain scores, respectively, at 12 months after surgery. Patients with severe preoperative mRS scores had a 4.7 times higher multivariate relative risk (RR) for severe mRS scores at 12 months following surgery. Moreover, patients with severe gait disturbance prior to shunt surgery had a 46.5 times greater multivariate RR for severe gait disturbance at the 12-month follow-up. Patients without improved gait following the tap test had multivariate RRs for unimproved gait disturbance of 7.54 and 11.2 at 3 and 12 months following surgery, respectively. Disease duration from onset to shunt surgery was not significantly associated with postoperative symptom severity or unimproved symptoms. CONCLUSIONS Patients with iNPH should receive treatment before their symptoms become severe in order to achieve an improved quality of life. However, the progression of symptoms varies between patients so specific timeframes are not meaningful. The authors also found that tap test scores accurately predicted shunt efficacy. Therefore, indications for shunt surgery should be carefully assessed in each patient with iNPH, considering the relative risks and benefits for that person, including healthy life expectancy.

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Hashimoto M, Ishikawa M, Mori E, Kuwana N (2010) Diagnosis of idiopathic normal pressure hydrocephalus is supported by MRI based scheme: a prospective cohort study. Cerebrospinal Fluid Res 7:7–11. https://doi.org/10.1186/1743-8454-7-18
2)
Yamada S, Kimura T, Jingami N, Atsuchi M, Hirai O, Tokuda T, Miyajima M, Kazui H, Mori E, Ishikawa M; SINPHONI-2 Investigators. Disability risk or unimproved symptoms following shunt surgery in patients with idiopathic normal-pressure hydrocephalus: post hoc analysis of SINPHONI-2. J Neurosurg. 2016 Jul 15:1-8. [Epub ahead of print] PubMed PMID: 27419822.