Preoperative diagnosis of idiopathic normal pressure hydrocephalus (iNPH) remains challenging. Recently, the presence of Disproportionate subarachnoid space hydrocephalus (DESH) on diagnostic images has been linked to clinical improvement after ventriculoperitoneal (VP) shunt placement.

In DESH-iNPH, the MMSE scores were significantly lower compared to those in normal MRIs and the UPDRSM scores were significantly higher those in ex vacuo VD and normal MRIs. Iseki et al. reported nearly the same prevalence in a Japanese cohort study [1].

In a study Benedetto et al. describe a new quantitative method to assess DESH on CT scans and to evaluate its prognostic value.

A multiplanar reconstruction software was used to retrospectively evaluate prospectively collected radiological data (CT scans) of 26 controls and 29 consecutive patients that underwent VP shunt placement for possible iNPH. The ratio between the areas of the sylvian fissure and the subarachnoid space at the vertex was calculated (SILVER index). The diagnostic accuracy of the SILVER index and the estimate of the best cut-point were assessed using ROC analysis.

The mean value of the SILVER index was 11.52±14.27 in the study group and 1.68±0.98 in the control group (p-value<0.0001). The area under the ROC curve for the SILVER index was 0.903 (95% CI 0.813-0.994). A cut-off value for the SILVER index of 3.75 was extrapolated with a sensitivity and specificity of 0.828 and 0.962 respectively.

The SILVER index is a reliable tool to easily quantify DESH on CT scans of patients with suspected iNPH. Its high sensitivity and specificity should encourage further investigations in order to confirm its clinical utility [2].

1)
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2)
Benedetto N, Gambacciani C, Aquila F, Di Carlo DT, Morganti R, Perrini P. A new quantitative method to assess disproportionately enlarged subarachnoid space (DESH) in patients with possible idiopathic normal pressure hydrocephalus: The SILVER index. Clin Neurol Neurosurg. 2017 Apr 19;158:27-32. doi: 10.1016/j.clineuro.2017.04.015. [Epub ahead of print] PubMed PMID: 28448824.