Adult hydrocephalus

see Chronic adult hydrocephalus.

Williams et al. described the demographics and clinical characteristics of the first 517 patients enrolled in the Adult Hydrocephalus Clinical Research Network (AHCRN) during its first 2 years.METHODSAdults ≥ 18 years were nonconsecutively enrolled in a registry at 6 centers. Four categories of adult hydrocephalus were defined: transition (treated before age 18 years), unrecognized congenital (congenital pattern, not treated before age 18 years), acquired (secondary to known risk factors, treated or untreated), and suspected idiopathic normal pressure hydrocephalus (iNPH) (≥ age 65 years, not previously treated). Data include etiology, symptoms, examination findings, neuropsychology screening, comorbidities, treatment, complications, and outcomes. Standard evaluations were administered to all patients by trained examiners, including the Montreal Cognitive Assessment, the Symbol Digit Modalities Test, the Beck Depression Inventory-II, the Overactive Bladder Questionnaire Short Form symptom bother, the 10-Meter Walk Test, the Boon iNPH gait scale, the Lawton Activities of Daily Living/Instrumental Activities of Daily Living (ADL/IADL) questionnaire, the iNPH grading scale, and the modified Rankin Scale.RESULTSOverall, 517 individuals were enrolled. Age ranged from 18.1 to 90.7 years, with patients in the transition group (32.7 ± 10.0 years) being the youngest and those in the suspected iNPH group (76.5 ± 5.2 years) being the oldest. The proportion of patients in each group was as follows: 16.6% transition, 26.5% unrecognized congenital, 18.2% acquired, and 38.7% suspected iNPH. Excluding the 86 patients in the transition group, who all had received treatment, 79.4% of adults in the remaining 3 groups had not been treated at the time of enrollment. Patients in the suspected iNPH group had the poorest performance in cognitive evaluations, and those in the unrecognized congenital group had the best performance. The same pattern was seen in the Lawton ADL/IADL scores. Gait velocity was lowest in patients in the suspected iNPH group. Categories that had the most comorbidities (suspected iNPH) or etiologies of hydrocephalus that directly cause neurological injury (transition, acquired) had greater degrees of impairment compared to unrecognized congenital, which had the fewest comorbidities or etiologies associated with neurological injury.

The clinical spectrum of hydrocephalus in adults comprises more than iNPH or acquired hydrocephalus. Only 39% of patients had suspected iNPH, whereas 43% had childhood onset (i.e., those in the transition and unrecognized congenital groups). The severity of symptoms and impairment was worsened when the etiology of the hydrocephalus or complications of treatment caused additional neurological injury or when multiple comorbidities were present. However, more than half of patients in the transition, unrecognized congenital, and acquired hydrocephalus groups had minimal or no impairment. Excluding the transition group, nearly 80% of patients in the AHCRN registry were untreated at the time of enrollment. A future goal for the AHCRN is to determine whether patients with unrecognized congenital and acquired hydrocephalus need treatment and which patients in the suspected iNPH cohort actually have possible hydrocephalus and should undergo further diagnostic testing. Future prospective research is needed in the diagnosis, treatment, outcomes, quality of life, and macroeconomics of all categories of adult hydrocephalus [1].

1)
Williams MA, Nagel SJ, Luciano MG, Relkin N, Zwimpfer TJ, Katzen H, Holubkov R, Moghekar A, Wisoff JH, McKhann GM, Golomb J, Edwards RJ, Hamilton MG. The clinical spectrum of hydrocephalus in adults: report of the first 517 patients of the Adult Hydrocephalus Clinical Research Network registry. J Neurosurg. 2019 May 24:1-12. doi: 10.3171/2019.2.JNS183538. [Epub ahead of print] PubMed PMID: 31125971.