P60

Cognitive profiles based on MRI ventricular size measurements in patients with idiopathic normal pressure hydrocephalus and Alzheimer disease. Implications for a diagnostic approach

Roberta Terranova[1], A. Luca[1], G. Donzuso[1], G. Mostile[1,2], R. Manna[1], C. D'Agate[1], C. Terravecchia[1], C. Rascunà[1], C.E. Cicero[1], A. Nicoletti[1], M. Zappia[1]

[1]University of Catania, Department of Medical and Surgical Sciences and Advanced Technologies "G.F. Ingrassia", Catania, Italy,
[2]Department of Neurology I.C., Oasi Research Institute-IRCCS, Troina (EN), Italy

Background and Aims: To evaluate the association between ventricular size measurements and cognitive performances in patients with cognitive complains validating measurements with confirmed clinical diagnosis.

Methods: We identified patients with cognitive impairment who underwent both standardized neuropsychological evaluation and MRI study demonstrating cerebral ventricular enlargement. Evans' Index (EI), Temporal Ratio (TR) and Parieto-Occipital Ratio (POR) were calculated based on neuroimaging. After the diagnostic workup, a diagnosis of idiopathic Normal Pressure Hydrocephalus (iNPH) or Alzheimer Disease (AD) was made. Considering discriminating cut-off! values of each index, cognitive performances between patients were compared. Sensitivity and specificity of computed indices in discriminating iNPH from AD were estimated.

Results: Fifty-two patients were identified. Regardless clinical diagnosis, 27 patients with normal EI had statistically-significant lower score on Rey Auditory Verbal Learning Test (RAVLT), both immediate (p=0.22) and delayed recall (p<0.001) as compared to 25 patients with abnormal EI. Thirteen patients with normal TR had statistically-significant lower score at the RAVLT-delayed recall (p<0.027) as compared to 38 patients with abnormal TR. No statistically-significant differences in cognitive performances were found between identified two groups on POR (8 pathological vs 44 normal). Twenty-six patients were diagnosed as iNPH (20 probable iNPH, 6 possible iNPH). Twenty-six patients received a diagnosed of probable AD. Sensitivity and specificity of MRI measures in differentiating iNPH vs AD were respectively: 84%(95%CI:65.1-95.6) and 87%(95%CI:60.6-93.4) for EI; 100%(95%CI:86.3-100) and 50%(95%CI:29.9-70) for TR; 30.7%(95%CI:14.3-51.8) and 100%(95%CI:86.7-100) for POR.

Conclusions: EI and TR measures differentiated amnestic patterns among study subjects. EI demonstrated the best accuracy in distinguish iNPH from AD.