Self-reported urinary impairment identifies ?fast progressors? in terms of neuronal loss in multiple system atrophy

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 Introduction: MSA is an adult-onset, sporadic, progressive parkinsonian syndrome characterised by the presence of akinesia, cerebellar dysfunction, autonomic failure and pyramidal signs. Annualized-whole-brain atrophy rate (a-WBAR) is an informative way to quantify disease progression. In this longitudinal work we investigate the correlations of a-WBAR with clinical scales for motor impairment, autonomic disability and cognitive decline in MSA and explore how atrophy progresses within the brain. Method: Fourty-one MSA patients were studied using Structural Imaging Evaluation with Normalization of Atrophy (SIENA). SIENA is an MRI-based algorithm that quantifies brain tissue volume. Clinical parameters were explored using the 18-item Movement Disorder Society-sponsored revision of the Unified Parkinson's Disease Rating Scale, the Hoehn and Yahr Scale, the Frontal Assessment Battery and the Natural History and Neuroprotection in Parkinson Plus Syndromes scale (sub-ite