

#435 Voiding efficiency is useful in differentiating multiple system atrophy from Parkinson's disease

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Introduction

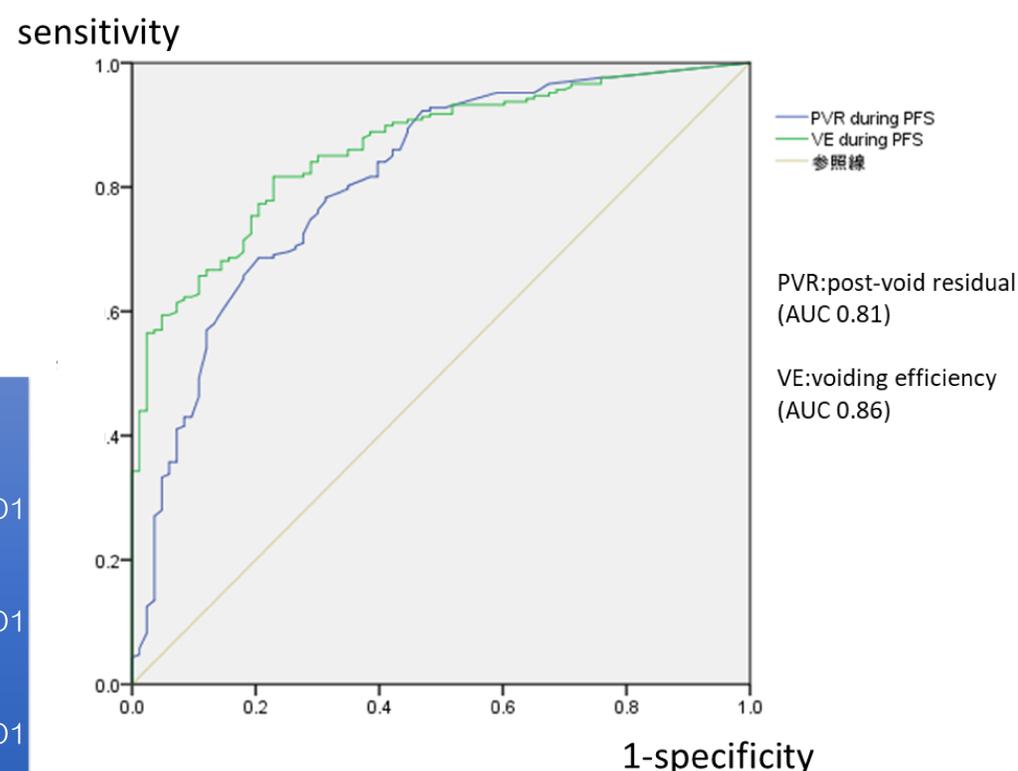
- It is usually difficult to differentiate multiple system atrophy (MSA) from Parkinson's disease (PD) in the early stage because parkinsonism is present in PD and MSA (especially parkinsonian type of MSA). Although levodopa responsiveness is useful in differentiating MSA from PD, some MSA patients show levodopa responsiveness in the early stage. Lower urinary tract dysfunction (LUTD) is prevalent and severe in PD and MSA. We previously reported that post-void residual (PVR) is significantly larger in MSA patients compared to PD patients and PVR is useful in differentiating MSA from PD.
- However, PVR depend on maximum bladder capacity and patients with smaller bladder capacity might have smaller PVR, suggesting that smaller PVR do not necessarily represent mild voiding dysfunction.
- Voiding efficiency (VE) might probably represent voiding dysfunction in patients with small bladder capacity and therefore might be appropriate in differentiating MSA from PD.
- We therefore aimed to examine whether voiding efficiency is useful in differentiating MSA from PD as compared to PVR.

Methods

- We retrospectively reviewed PD patients (n=85, mean age 66.9 years, mean duration 3.2 years) and MSA patients (n=237, mean age 63.3 years, mean duration 3.2 years) who underwent urodynamic study
- We examined whether PVR and VE during pressure flow study (PFS) is useful in differentiating MSA from PD by performing receiver operating characteristics (ROC) analysis.

Result

	PD	MSA	p value
PVR (ml)	82.1±12.6	226.8±11.3	P<0.01
Voided volume(ml)	230.0±12.7	117.8±9.8	P<0.01
Voiding efficiency(%)	79.5±2.5	33.9±2.2	P<0.01



Discussion

- Our result suggested that VE might be more appropriate than PVR in differentiating MSA from PD. Because some MSA patients show reduced bladder capacity, indicating that PVR do not necessarily represent the degree of voiding dysfunction, the present result might be helpful for clinical practice.
- We evaluated the PVR during PFS rather than during free-flow study because we previously reported that PVR during PFS had larger AUC compared to PVR during free-flow study.
- Because MSA patients usually show both storage and voiding dysfunction attributable to the degeneration in spinal autonomic neuron, the precise examination of LUTD is usually difficult in MSA patients. The present result might suggest that VE is useful for differentiating MSA from PD.

Conclusion

VE might be helpful in differentiating MSA from PD compared to PVR.