

#518 Association between lower urinary tract symptoms and motor, cognitive, and health-related quality of life in an advanced stage of Parkinson's disease.

Tatsuya Yamamoto^{1),2)}、Yoshitaka Yamanaka²⁾、Shigeki Hirano²⁾、Nobuyuki Araki²⁾、Atsuhiko Sugiyama²⁾、Satoshi Kuwabara²⁾

1) Department of Rehabilitation Science, Chiba Prefectural University of Health Sciences

2) Department of Neurology, Graduate School of Medicine, Chiba University



CHIBA UNIVERSITY

Introduction

- Parkinson's disease (PD) is a neurodegenerative disease characterized by bradykinesia, rigidity, and resting tremors. Among autonomic dysfunctions, lower urinary tract dysfunctions are prevalent and severe in an advanced stage of PD.
- There are many papers examining the prevalence and severity of lower urinary tract symptoms in PD, and it is well-known that both urinary storage and voiding symptoms are prevalent in PD.
- However, the association between lower urinary tract symptoms and motor, cognitive, and health-related quality of life (HRQOL) is not well understood.
- We aimed to clarify the association between lower urinary tract symptoms and motor and cognitive functions, and HRQOL by performing multiple regression analysis.

Method

- We examined 34 PD (14 male patients and 20 female patients) patients who were admitted to our hospital. The mean age was 61.5 ± 8.6 years and the mean disease duration was 11.7 ± 3.0 years.
- The lower urinary tract symptoms and QOL was examined by International Prostate Symptom Score (IPSS) and IPSS-QOL, respectively. The motor symptoms and activities of daily living (ADL) were examined by Unified Parkinson's disease Rating Scale (UPDRS). The cognitive functions were examined by Mini-Mental State Examination (MMSE) and Frontal Assessment Battery (FAB). The HRQOL was examined by Parkinson's disease Questionnaire-39 (PDQ-39).
- We performed multiple regression analyses to determine which clinical parameters such as motor and cognitive functions, and HRQOL affect the lower urinary tract symptoms.

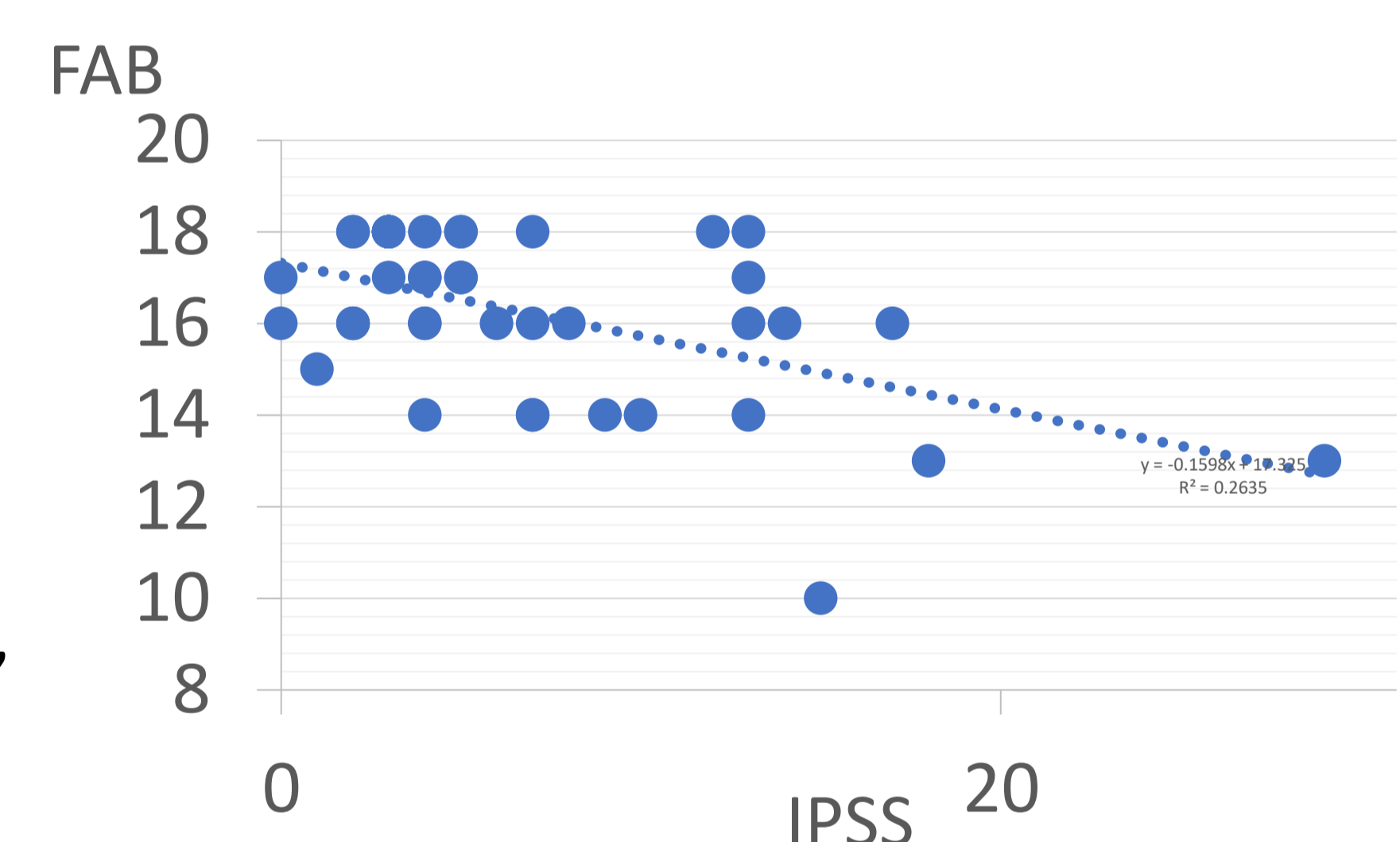
Result

IPSS	7.21 ± 1.50
LED(mg)	1269 ± 62
PART1	2.28 ± 0.39
PART2 off	20.26 ± 1.21
PART2 on	8.21 ± 0.92
PART3 off	38.18 ± 2.28
PART3 on	16.03 ± 1.27
PART4	7.53 ± 0.57
MMSE	28.53 ± 0.26
FAB	16.15 ± 0.33
PDQ-39SI	31.46 ± 2.65

- The score of IPSS had significant negative associations with the score of FAB ($\beta = -0.391$, $p = 0.031$).
- Because the higher FAB score represents better frontal lobe functions, the present results suggested that better frontal lobe functions led to better lower urinary tract symptoms.
- The score of IPSS-QOL had significant positive associations with the score of UPDRS Part 3 (motor functions) during the on phase ($\beta = 0.599$, $p = 0.005$).
- Because the higher score of UPDRS Part 3 represents the worse motor functions, better motor functions during the on-phase lead to better IPSS-QOL.

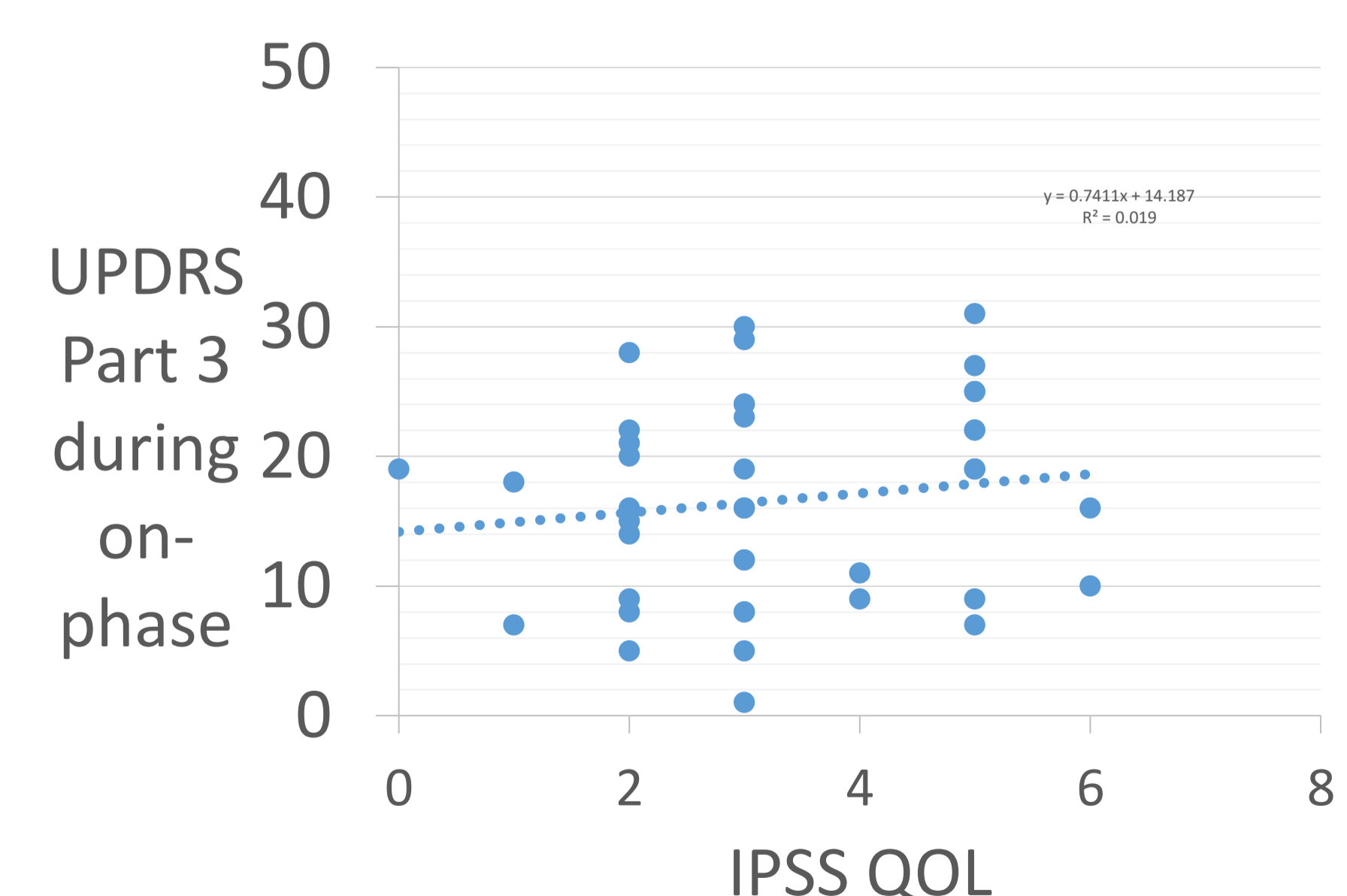
IPSS

	Standardized β	P value
FAB	-0.391	P=0.031



IPSS QOL

	Standardized β	P value
Part 3 on phase	0.599	P=0.005



Discussion

- It is very important that better frontal lobe functions led to better lower urinary tract symptoms. Recent several imaging studies and experimental animal studies suggested that the frontal lobe has an important role in regulating voluntary micturition. The present result might indicate that examining frontal lobe function is important for the evaluation of lower urinary tract symptoms in PD patients.
- Concerning the associations between IPSS-QOL and motor functions, it is also reasonable that relatively preserved motor function during the on phase led to better IPSS-QOL.

Conclusion

Better frontal lobe functions might lead to better lower urinary tract symptoms.
Better motor functions during the on-phase lead to better IPSS-QOL.