

Significance of the arm function measurement using STEF in Parkinson's disease

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Abstract

To clarify the significance of the arm function measurement using STEF in Parkinson's disease (PD), we assessed the relationship between the Simple Test for Evaluating Hand Function (STEF) and the psychomotor function, including the Self-rating Depression Scale (SDS), the Frontal assessment battery at the bedside (FAB), the Mini-Mental State Examination (MMSE) and the unified Parkinson's disease rating scale (UPDRS) in patients with PD. A significant correlation was found between STEF and SDS / UPDRS. Therefore, STEF may indicate the disease severity of parkinsonism and depression.

Introduction

Parkinson's disease (PD) is a neurological disorder involving the progressive degeneration of the dopaminergic system, which gives rise to movement-related dysfunctions (such as bradykinesia, tremor, and rigidity) as well as other symptoms, mainly of cognitive and psychological nature. In the latter case, mood disorders prevails frequently causing anxiety and depression in all phases of the disease, sometimes even before the motor symptoms occur [1-3]. Simple Test for Evaluating Hand Function (STEF) is the examination that an occupational therapist uses for an evaluation routinely of the arms function [4]. In our hospital, we evaluate arms function to the PD patients in STEF. It was not clear till now what kind of Parkinson symptom STEF reflected in the patients. We considered whether STEF correlated with motor / the

mentation of the PD patients in this study.

Subjects and Methods

The subjects was 19 patients whom Tokushima National Hospital Parkinson's disease rehabilitation was admitted to. The age was 70.1+6.08 years old. The disease duration period was 8.5 years +8.1 year. Hoehn & Yahr stage was 3.3+0.3.

The end-point adopted the total point and time required of right and left of STEF. We used Self-rating Depression Scale (SDS) / Mini-Mental State Examination (MMSE) / Frontal assessment battery at bedside (FAB) as mentation. The unified Parkinson's disease rating scale (UPDRS) was used as disease severity of Parkinson's disease.

Results

The association of STEF (total point) was

examined. Significant correlation was found in STEF and SDS. However, the clear correlation was not thought to be FAB and MMSE (Figure 1). Significant correlation was found in STEF and UPDRS part 1, 2 and 3 (Figure 2). Then, association of STEF (total time) was examined. STEF significantly correlated with SDS. The correlation was not seen in STEF and FAB/MMSE (Figure 3). About the correlation of UPDRS and STEF, dominant correlation was seen in only UPDRS Part 2 and STEF (Figure 4).

Discussion

Motor and nonmotor deficits are characteristic features of this disease. Previously it was believed that intellect is preserved in PD, but several recent researches report of cognitive deficits and impairment. It is rather strange to note that not enough of stress has been laid on this disorder from the neuropsychological perspective because it seems that almost all kinds of cognitive dysfunctions are prevalent in the PD.

As for SDS and UPDRS part1 - 3, significant correlation was found in total score of STEF and the total time required. STEF significantly correlated with SDS and UPDRS part 1, 2 and 3. It was thought that STEF was useful for an index of the disease severity of parkinsonism or an index of the depression.

References

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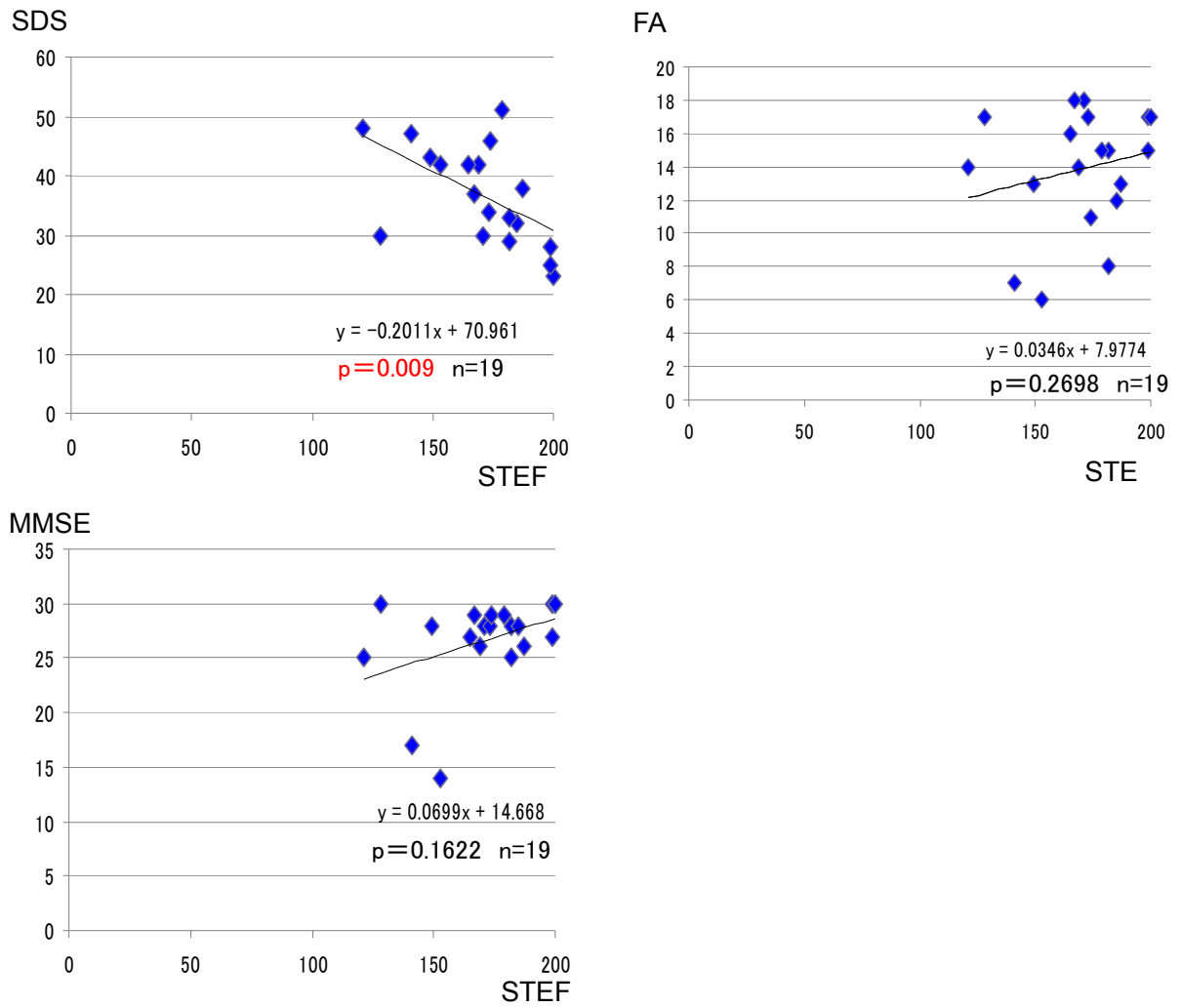
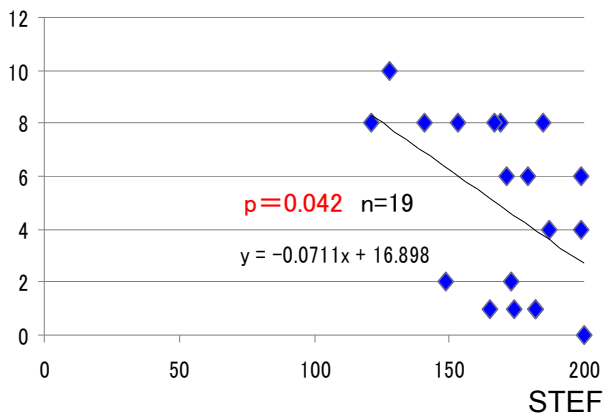
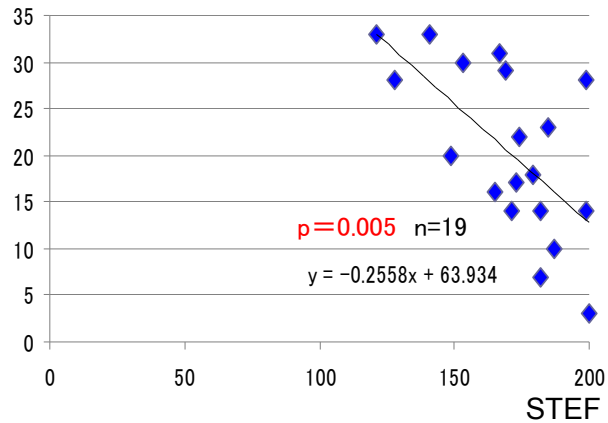


Figure 1. The association of STEF (total points) with SDS, FAB and MMSE

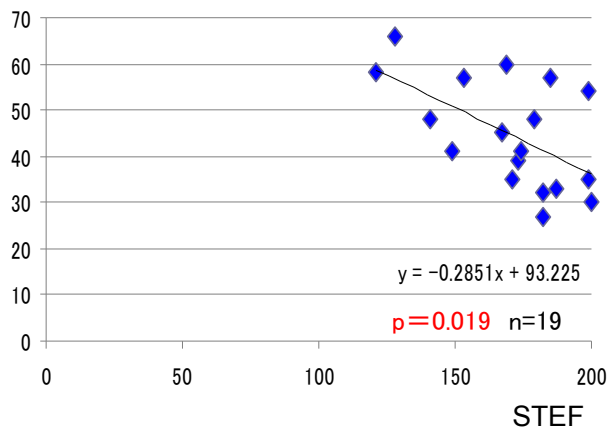
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UPDRS pt 2



UPDRS pt 3



UPDRS pt 4

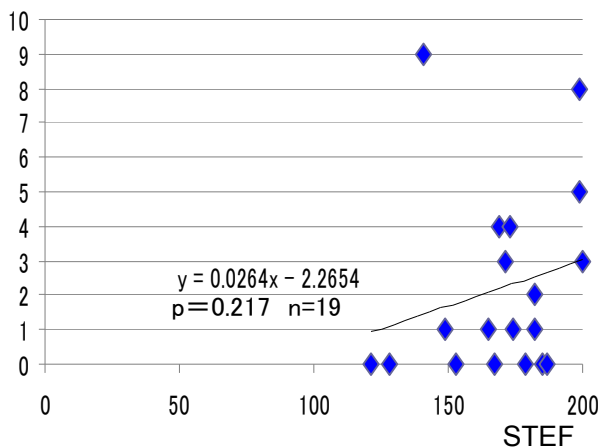


Figure 2. The association of STEF (total points) with UPDRS parts 1-4

Figure 3

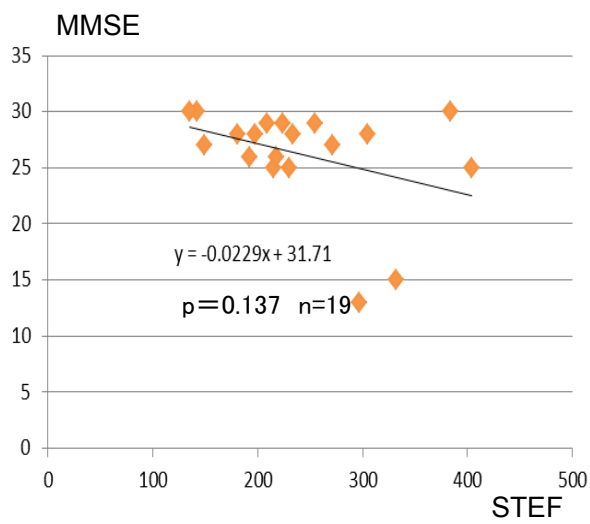
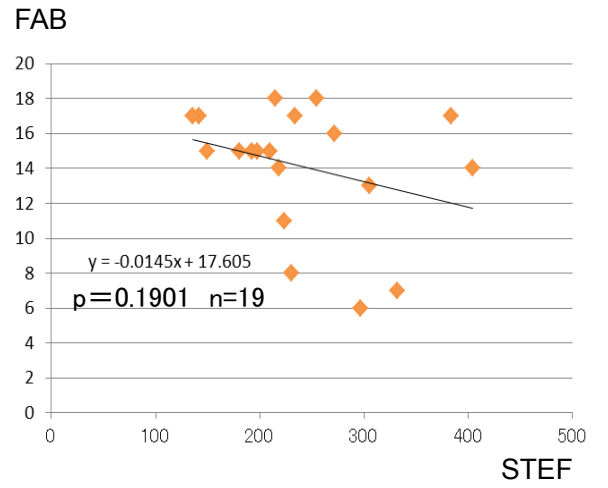
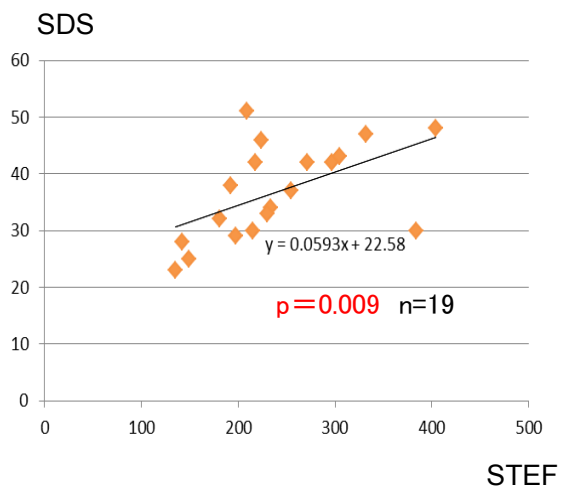


Figure 3. The association of STEF (total time) with SDS, FAB and MMSE

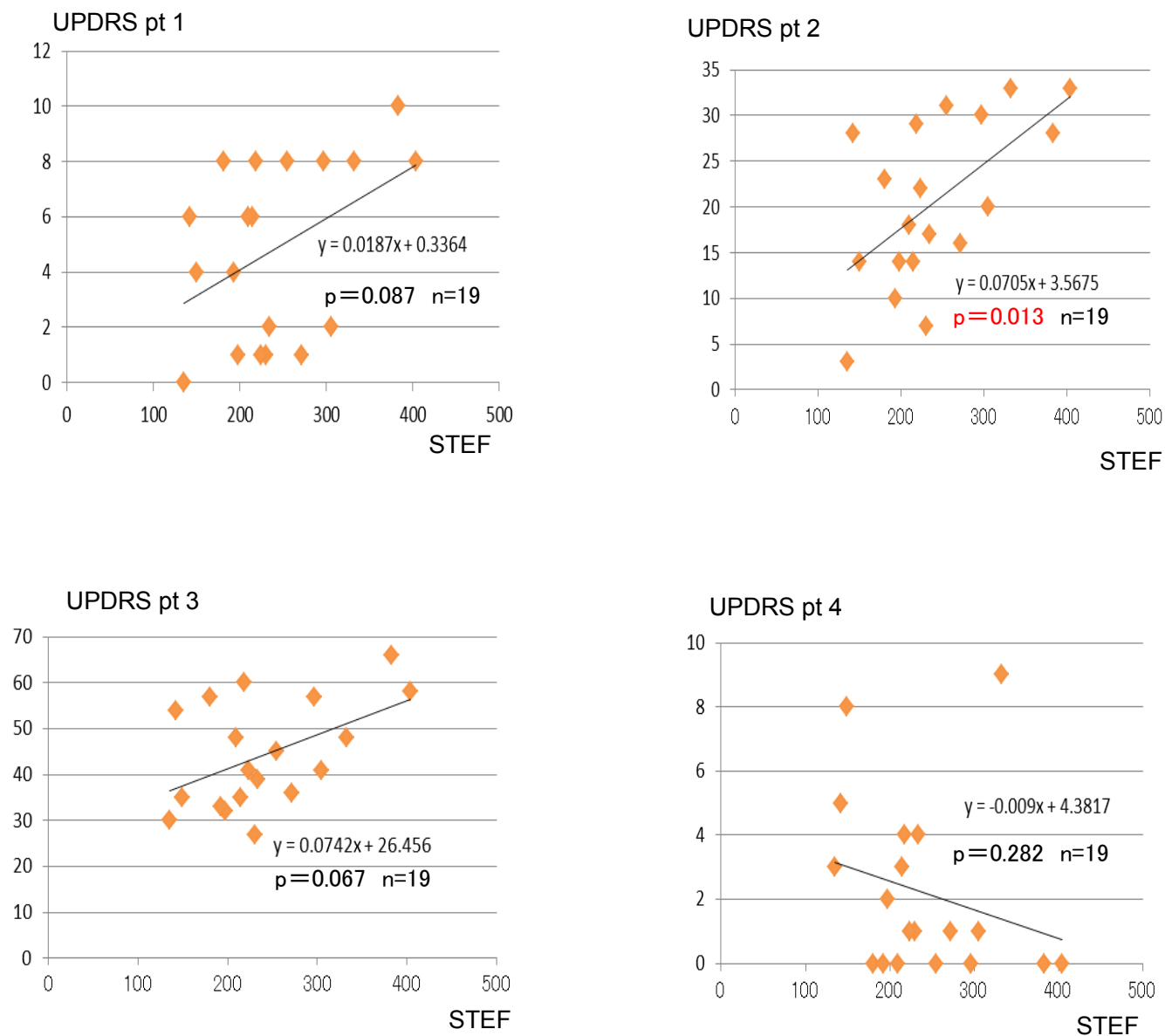


Figure 4. The association of STEF (total time) with UPDRS parts 1-4