

A Comparison of Methods for the Measurement of Oral Diadochokinesis

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Oral diadochokinesis is one of the oral functional indexes. The following three methods are known to evaluate it: the IC-method, in which the experimenter measures the recorded sound wave on a recorder; the calculator-method, in which the experimenter taps the memory function key of the calculator, sympathized with the syllable; and the dot-method, in which the experimenter dots with a pen, sympathized with the syllable. Recently, we developed a new measurement device, KENKOU-KUN, which automatically measures the numbers of oral diadochokinesis. The purpose of this study was to compare the number of oral diadochokinesis among the IC-method, the calculator-method, and the KENKOU-KUN method.

Three hundred and seventy-eight 79-year-old people (183 men, 195 women) participated in a cohort study conducted in 2007, and 355 elderly people (175 men, 180 women) participated in the 2008 study. They were instructed to repeat the syllables /pa/, /ta/, and /ka/ with maximum performance for five seconds. The number of oral diadochokinesis was measured with the IC-method, the calculator-method, and the KENKOU-KUN method.

The average numbers of /pa/, /ta/, and /ka/ were 6.0 ± 0.9 , 6.0 ± 0.9 , and 5.7 ± 0.8 /s, respectively. There was a strong positive correlation between the IC-method and the KENKOU-KUN method ($p < 0.01$). On the other hand, the correlation between the IC-method and the calculator-method was weaker than that between the IC-method and the KENKOU-KUN method. The numbers of miscount with the calculator-method were increased in cases over 7.0/s with the IC-method. It might relate the slower speed of finger tapping compared to oral diadochokinesis.

It was revealed that the KENKOU-KUN method could precisely measure the number of oral diadochokinesis, while the calculator-method was limited for the accurate measurement. Further studies required to create criteria by age and the degree of care-needed.

Key Words : oral diadochokinesis, oral function, elderly

200821013B

本研究報告書には下記のCD-R 1枚が添付されています。

厚生労働科学研究費補助金

長寿科学総合研究事業

「口腔機能の向上の実施体制と評価に関する研究」

(H18-長寿-一般-020)

総合研究報告書(平成18年～平成20年)

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