

AN IMPROVED DIAGNOSTIC METHOD BASED ON HAND FUNCTIONALITY FOR FIBROMYALGIA SYNDROME

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ABSTRACT

Objective: Misdiagnosis is a common medical error and presents a significant area for improvement relevant to patient safety. One difficult condition to diagnose is fibromyalgia syndrome (FMS); clinical diagnosis may be determined after three to five years, usually through the process of elimination. The researcher is evaluating a newly-approved FDA medical device the SKG™ System to measure hand functionality of FMS cases to determine if hand functionality may be more accurate and specific indicator for FMS.

Methods: Case series of clinically diagnosed FMS patients are presented based on motor and sensory hand functionality evaluation. Each case is measured for 13 test parameters (mean strength, finger strength ratio, sensory evaluation, differential fatigue, control differential, timing differential, coordination, hand fatigue, etc.) in each hand. Cumulatively, the measurements are used to determine a unique hand functionality pattern and characteristic among FMS cases.

Results: FMS cases show a consistent pattern and characteristic of motor and sensory hand functionality. The sample size is low and the results should be considered as preliminary findings to support a larger study. Mean strength, sensory and motor patterns show strong deviation of hand fatigue, motor and sensory control that appear to be unique to this population. FMS cases also exhibit co-morbidities (arthritis, CTS, etc.) that must be detected, accounted, and removed from the analysis.

Conclusions: The SKG™ System is a noninvasive, accurate, reliable, low-cost, painless, and quick device to measure hand functionality of FMS patients. Results show that it is possible to improve diagnosis and evaluation of FMS.

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