Sleep spindle alterations in patients with Parkinson's disease - DTU Orbit (08/11/2017)

Sleep spindle alterations in patients with Parkinson's disease

The aim of this study was to identify changes of sleep spindles (SS) in the EEG of patients with Parkinson's disease (PD). Five sleep experts manually identified SS at a central scalp location (C3-A2) in 15 PD and 15 age- and sex-matched control subjects. Each SS was given a confidence score, and by using a group consensus rule, 901 SS were identified and characterized by their (1) duration, (2) oscillation frequency, (3) maximum peak-to-peak amplitude, (4) percent-to-peak amplitude, and (5) density. Between-group comparisons were made for all SS characteristics computed, and significant changes for PD patients vs. control subjects were found for duration, oscillation frequency, maximum peak-to-peak amplitude and density. Specifically, SS density was lower, duration was longer, oscillation frequency slower and maximum peak-to-peak amplitude higher in patients vs. controls. We also computed inter-expert reliability in SS scoring and found a significantly lower reliability in scoring definite SS in patients when compared to controls. How neurodegeneration in PD could influence SS characteristics is discussed. We also note that the SS morphological changes observed here may affect automatic detection of SS in patients with PD or other neurodegenerative disorders (NDDs).

General information

State: Published
Organisations: Department of Electrical Engineering, Biomedical Engineering, Department of Applied Electronics, University of Copenhagen, University of Montreal, Stanford University, University of Bologna
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Publication date: 2015
Main Research Area: Technical/natural sciences

Publication information

Journal: Frontiers in Human Neuroscience
Volume: 9
Article number: Article No.: 233
ISSN (Print): 1662-5161
Ratings:

BFI (2017): BFI-level 1

Web of Science (2017): Indexed Yes

BFI (2016): BFI-level 1

Scopus rating (2016): CiteScore 3.38 SJR 1.739 SNIP 1.113

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 1

Scopus rating (2015): SJR 1.883 SNIP 1.037 CiteScore 3.47

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 1

Scopus rating (2014): SJR 1.626 SNIP 0.942 CiteScore 3.23

BFI (2013): BFI-level 1

Scopus rating (2013): SJR 2.099 SNIP 0.96 CiteScore 3.41

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

Scopus rating (2012): SJR 2.655 SNIP 1.17 CiteScore 4.05

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

Scopus rating (2011): SJR 2.024 SNIP 0.857 CiteScore 2.35

ISI indexed (2011): ISI indexed no

Scopus rating (2010): SJR 1.698 SNIP 0.955

Scopus rating (2009): SJR 1.427 SNIP 0.634
Original language: English
disease prognosis, maximum peak-to-peak amplitude, morphological characteristics, oscillation frequency, percent-to-peak amplitude, sleep spindle alteration, neurodegenerative disorders Neurodegenerative Diseases (MeSH) nervous system disease, Parkinson's disease nervous system disease pathology, Primates Mammalia Vertebrata Chordata Animalia (Animals, Chordates, Humans, Mammals, Primates, Vertebrates) - Hominidae [86215] human common middle age, aged female, male, 12502, Pathology - General, 20506, Nervous system - Pathology, 24500, Gerontology, Human Medicine, Medical Sciences, Neurology
Electronic versions:

fnhum_09_00233.pdf

DOIs:
10.3389/fnhum.2015.00233
Source: FindIt
Source-ID: 275247401
Publication: Research - peer-review › Journal article – Annual report year: 2015