



Correspondence

Comment on “Small Fiber Neuropathy in Parkinson's disease explored by the sudoscan”



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ABSTRACT

Dr. Cyprian's study show no significant different in electrochemical skin conductance between Parkinson's disease patients and controls, which is inconsistent with our recently published data. We propose that this difference may caused by the bias of patient selection and levodopa application.

1. Correspondence

We thank the editors for their invitation to respond to Dr. Cyprian's paper “Small Fiber Neuropathy in Parkinson's disease explored by the sudoscan”, which is closely related to our recently published data [1]. In contrast to our results, Dr. Cyprian's study concerning 67 Parkinson's disease (PD) patients evaluated in ambulatory didn't show a significant reduction in electrochemical skin conductance (ESC) compared with controls.

Although the conclusions are different, the patients characteristics is highly complementary between our two studies. PD is mainly found in older people, who often have comorbidities, such as diabetes, tumors, degenerative diseases, peripheral vascular diseases et al., which might predispose them to subclinical peripheral neuropathy. So inpatients are selected in our research and detailed examination can be performed to rule out related diseases. But the other problem arises: the participants mostly in the later stages of the PD with severe autonomic symptoms. Dr. Cyprian's study focused on moderate stages of the PD and found no significant differences in ESC values between PD and controls. There is a current view that PD autonomic neuropathy may be related to the disease itself and the application of levodopa [2]. Therefore, these two factors need to be treated with caution when studying the autonomic neuropathy in PD.

The evaluation of diabetic autonomic neuropathy with Sudoscan is widely recognized, but application of Sudoscan in autonomic neuropathy caused by other diseases still needs to be cautious. That is why our studies are performed. Though, it has been reported that ESC value was negative correlated with sweat gland nerve fiber density, as well as the epidermal fiber density [3]. In theory, Sudoscan measures the flow of chloride ions provoked by electric current which may be affected by the damage of sudomotor and also the dysfunction of sweat glands [4]. The lose of sudomotor nerve and the dysfunction of sweat glands may be progress in parallel in diabetes, making the application of Sudoscan more credible. In clinical observation of the PD patients, motor fluctuations on levodopa and other dopaminergic medications association

with sweating dysfunction. It is unclear whether levodopa has an effect on the concentration of chloride ions in sweat. The patients was tested during the ON stage in our study, and it is obvious that the effects of levodopa cannot be ruled out. Enrollment of levodopa-naive patients and detection of skin nerve fiber density is critical in future study.

Tests of ESC in the 1350 people found a weak correlation between ESC and age [5], which was not observed in our study. This inconsistency may be caused by the small sample size or ethnic difference. Whether the new version of Sudoscan including age as a covariate may also be the reason.

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