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The Peculiarities of Circadian Rhythms and Their Implications on Parkinson's Disease

Lilia Rotaru, Mădălina Cebuc, Adrian Lupuşor, Oxana Grosu, Victor Vovc, Svetlana Lozovanu, Ghenadie Cărăuşul, Stanislav Groppa

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Abstract

Unsettling epidemiological data suggest Parkinson's disease as the second most common neurodegenerative disorder worldwide. The worries persist as there is a demographic tendency towards the ageing of the population as the life expectancy rises. Simultaneously, circadian rhythm disruptions become more frequent as artificial life sources multiply in our daily lives. Thus, the interest of this study resides in determining the traits the endogenous clock has in the context of Parkinson's. In order to reach this aim, a case control approach was selected which helped identify the associations between altered sleep quality and the disease ($p = 0.007$) along with the worsening of the motor dysfunctions ($p = 0.029$). Additionally, chronotype based variances in symptomatology's severity was observed – worst outcomes remarked in morning individuals. Furthermore, the effect light, as main zeitgeber, exerts in diagnosed subjects was assessed and completed with from complementary studies evaluating its uses as a therapeutic tool. The end point of this paper was to attract attention upon an insufficiently researched topic, as are circadian rhythms disruptions in Parkinson's disease, since they only recently acquired a diagnostical relevance as prodromal non-motor symptoms. Correspondingly, we wanted to incite researchers from different fields to study ways of using the biological clock's peculiarities to enhance diagnosed patients' lives through a transdisciplinary approach.

Keywords: circadian rhythms, Parkinson's disease, chronotype, sleep

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