



Telephone visit efficacy for Parkinson's disease during the COVID-19 pandemic

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1. Introduction

There has been growing interest in using telemedicine to expand accessibility of patients with Parkinson's disease (PD) to clinical care. Efficacy of telemedicine visits continues to be evaluated [1–3]. During the COVID-19 pandemic, there was an abrupt transition from in-person to remote visits [4]; in our center, due to regulatory and practical barriers, this was conducted by telephone. This abrupt externally-induced and near-complete transition provided an opportunity to directly compare telephone and in-person visits, independent of factors related to patient choice of intervention. Therefore, we explored whether the absence of face-to-face interactions would alter the frequency of changes in medical therapy.

We reviewed medical records of 100 PD patients followed at McGill Movement disorders clinic who had a telephone visit March–May 2020 (convenience sample) plus at least one prior in-person visit within 12 months. The project was approved by the local institutional review board; waiver of Informed Consent was granted due to the study's retrospective nature. The primary outcome was the proportion of visits which ended in a change of therapy. We used the chi-square test and logistic regression for comparison of categorical variables.

The population was 40% female, age = 72 ± 10.1 years (Table 1). The average time between the two consecutive visits was similar between telemedicine and in-person visits (5.97 ± 2.1 vs. 6.03 ± 2.3 months). Overall, we observed fewer medication changes during telephone visits; a change was made in 44% of telemedicine visits compared to 59% of the preceding in-person visit [OR 1.83, 95%CI: 1.05–3.21]. This reduction was particularly evident for starting a new medication (new motor medication = OR 3.27[95%CI: 1.02–10.52], new non-motor medication = OR 3.62[95%CI: 1.27–10.3]). Patients in telemedicine visits were less often referred for outside consultation (0% telemedicine vs. 5% in-person, $p = 0.024$). There was a modest nonsignificant reduction dose changes of existing treatments in telemedicine visits (motor [OR 1.28, 95%CI: 0.73–2.24], non-motor OR 1.83, 95%CI: 0.84–3.99).

There are abundant reasons that medication changes may be less frequent in telephone visits. These include general discomfort with the lack of face-to-face interaction, absent neurological examination, reduced ability of patients to clearly explain their clinical difficulties,

and reluctance to make modifications in the context of life changes related to the pandemic itself. Modern technologies including social media might improve the interaction further [5], provided privacy concerns can be addressed. Note that this study did not assume a 'correct' level of medication change frequency; rather we explored how format altered treatment decisions. Whereas our study may point to limitations of telephone consultations, the relatively modest difference between visit types (44% vs 59%), can also suggest that telephone visits were conducted with rigor and may be a reasonable option in certain situations.

In the current pandemic telemedicine became overnight an important tool for care of PD patients. Healthcare providers should be aware of potential differences in treatment decisions according to visit type.

2. Author roles

F Abu Ahmad collected data, and wrote the first draft. R Postuma modified the manuscript and made additions. Both authors analysed the data, reviewed the literature and approved the final version.

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Table 1
Treatment modifications in telemedicine compared to in person visits.

| | Telemedicine (n = 100) | In person (n = 100) | OR[95%CI] |
|---|---------------------------|------------------------------|----------------------|
| Any change in treatment | 44 | 59 | 1.83 [1.05–3.21] |
| Change in motor treatment | 40 | 46 | 1.28 [0.73–2.24] |
| New motor treatment | 4 | 12 | 3.27 [1.02–10.52] |
| Motor treatment discontinuation | 3 | 7 | 2.43 [0.61–9.69] |
| Change in non-motor treatment | 12 | 20 | 1.83 [0.84–3.99] |
| New non-motor treatment | 5 | 16 | 3.62 [1.27–10.3] |
| non-motor treatment discontinuation | 1 | 1 | 1 [0.06–16.21] |
| New consultation | 0 | 5 | |
| New recommendation for surgery/duodopa | 0 | 2 | |

OR – Odds Ratio.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence

the work reported in this paper.

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