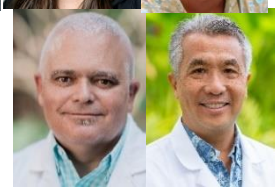
Progression of Dopaminergic Therapy Changes in Parkinson's Disease in Asian and Native Hawaiian and Pacific Islander Populations



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Previous research has identified ethnic disparities to be pre- sent in Parkinson's disease (PD), with PD disproportionately affecting Hispanic and Latino populations at earlier ages of diagnosis and mortality. To characterize differences in PD treatment and progression in Asian and Native Hawaiian and Pacific Islander (NHPI) populations, we conducted a retrospective chart review of change in dopaminergic medi- cations assessed by levodopa equivalent daily dosage (LEDD) score. LEDD score was calculated using medication dosage and frequency, based on a previously established algorithm. Fisher's exact tests, Kruskal-Wallis rank sum test, and Spearman's correlation coefficient were used as appropriate.

We analyzed 345 patient records from a single PD treatment center in Hawaii, with mean age of the study sample being 69 years and 48% women. There were 126 Whites (48%), 96 Asians (37%), 30 NHPI (11%), and 10 other (4%). Asian females and White males displayed an increased preva- lence of PD compared to other groups (P = 0.008). Among the mean age at diagnosis, NHPI were diagnosed earliest (64 years, P = 0.040). This aligns with previous literature that identified minority populations to be diagnosed with PD at a younger age compared to Whites. Our research found a positive association between LEDD score and duration of PD in NHPI (P = 0.00063) and Asians (P = 0.0056) (Fig. 1). This contrasts with Whites, whose LEDD score did not increase significantly despite having longer duration of disease compared to other groups. A recent study has suggested that NHPI experience accelerated biological aging (using DNA-methylation as a marker) in comparison to Whites, which could be contributing to our findings. Previous studies demonstrate that other minority populations such as Latinos and African Americans experience similar differences of PD levodopa therapy progression as compared to Whites. Overall, our findings indicate that NHPI and Asian patients require higher medication dosages over time to manage their PD. These studies, along with our research, suggest the possibility that minority populations may experience more severe PD than Whites.

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