



Multiple Sclerosis Pilot Study: Are There Differences in Spinal Cord Involvement Among the Ethnocultural Groups of Hawaii?

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Objective: To detect differences in lesion burden, clinical presentation, and disability severity among newly diagnosed Multiple Sclerosis (MS) patients in Hawaii as stratified by ethnocultural background

Background: In their 2013 paper, Amezcua suggests that spinal cord lesion burden on initial presentation may correlate with disability level in Hispanic MS patients, and posits that spinal magnetic resonance imaging (MRI) may be helpful in predicting long-term outcomes for MS patients. Similar studies have not yet been conducted to analyze potential associations within the richly diverse population of Hawaii.

Methods: This is a single center retrospective study of patients ages ≥ 18 with an MS diagnosis (ICD-10 G35) between 2008-2023. Demographics, comorbidities, and presenting Expanded Disability Status Scale (EDSS) scores were collected. Initial spine and brain MRI reports and EDSS scores at imaging were recorded as available.

Results: The ethnocultural breakdown of the 128 patients gathered: 85 White, 12 Hispanic, 10 Asian, 9 Black, 6 Native Hawaiian and Other Pacific Islander (NHOPI), and 6 Other. There were no significant differences in demographics or comorbid conditions. Caucasians presented at a significantly older age as compared to Hispanics ($p=0.0015$). NHOPI had significantly higher EDSS scores at presentation compared to Hispanics ($p=0.036$). No significant differences were found for either spine MRI lesion burden or location ($n=62$), or brain MRI lesion burden or location ($n=67$). Multiple lesions on spine MRI correlated significantly with higher EDSS scores than those with 1 lesion on spine MRI ($p=0.0067$), but this relationship did not hold when compared to those with no lesions ($p=0.58$).

Conclusions: There was no difference in the burden or location of spinal/brain MRI lesions at time of diagnosis. Interestingly, NHOPI had higher EDSS scores at presentation when compared to Hispanics. While the data hint at positive correlation between number of spine lesions on MRI and EDSS scores, larger sample sizes are needed to confirm.