Headache Medicine 2026, Supplement • p-ISSN 2178-7468, e-ISSN 2763-6178

Headache Medicine

ID: 394

The profile of headache hospitalizations in border regions and remote areas

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Introduction
Access to the neurology network in Brazil is profoundly unequal, worsening in border zones and remote regions. In these localities, the absence of specialized centers imposes a critical dependence on elective and urgent medical transport. Hospital admission for headaches in these areas often reflects not only clinical severity but the impossibility of outpatient management due to geographic isolation. Analyzing the profile of these admissions is fundamental to understand how access vulnerability transforms the territory into a direct determinant of length of stay and healthcare costs in the SUS.

Objective
To investigate the clinical characteristics and hospital length of stay of patients admitted for headache syndromes (G43-G44) in municipalities classified as "border" or "remote" (according to IBGE criteria), comparing the outcomes with the national average.

Methods
A retrospective ecological study using SIH/DATASUS microdata (2019-2023). The sample (n=51,306) was segmented between municipalities in the "Legal Amazon" and border strips versus consolidated urban centers. Using RStudio, the average length of stay, average cost per AIH, and the proportion of admissions by municipality size were calculated. The statistical analysis sought to identify whether remote location acts as a predictive factor for increased hospitalization time, controlling for age and hospital type.

Results
Border municipalities and remote areas accounted for 4,890 admissions (9.5% of the national sample). The average hospital length of stay in these locations was 5.4 days, significantly exceeding the national average of 3.9 days. It was identified that patients residing in remote areas are, on average, 4.2 years older than patients from metropolitan areas when admitted for headaches. The average admission cost in these regions was 18% higher than the rest of the country's average, evidencing the impact of the logistical costs of maintaining beds in hard-to-reach areas and the lower turnover rate of hospital beds.

Conclusion
Residence in remote and border areas acts as a risk factor for prolonged hospitalization. The average time of 5.4 days reflects a scenario where transportation difficulties and a shortage of back-up beds force extended hospitalizations, since hospital discharge is delayed by the logistical viability of returning home. These data demonstrate that, in peripheral regions, headache hospitalization fulfills a social and logistical function in addition to a clinical one. In this sense, creating regional neurological care hubs, equipped with teleconsultation for low-complexity case triage, presents itself as the most promising strategy to decentralize care, reduce the pressure on reference hospitals, and optimize the use of public resources in geographically vulnerable regions.

Keywords:
Length of stay
Geographic isolation
Healthcare access

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