Understanding the Impact of Variables on the Prevalence of Ischemic Stroke and Transient Ischemic Attack in Patients With Myeloproliferative Neoplasms: An Analysis of the National Inpatient Sample

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Introduction

Myeloproliferative neoplasms (MPNs) are associated with an increased prevalence of thromboembolic events, particularly ischemic strokes and transient ischemic attacks (TIAs), leading to significant comorbidity and disease burden. This study aims to identify variables, including comorbidities and risk factors, that influence the prevalence of ischemic brain insults in MPN patients, thereby enhancing our understanding and informing treatment strategies to reduce stroke incidence and improve patient care.

Methods

This was a retrospective analysis of the 2022 National Inpatient Sample (NIS) database, part of the Healthcare Cost and Utilization Project (HCUP). Patients admitted with a diagnosis of MPN were selected as study population. The cohort was divided into two groups: those who experienced ischemic brain insults (thromboembolic stroke or TIA) and those without. Logistic and linear regression models were employed to identify statistically significant differences between the groups and to analyze the impact of different variables.

Results

Among 193,925 patients with MPN, 5,445 (2.81%) experienced an ischemic brain insult. This group had a higher average age (73 years) compared to those without stroke (69 years). The length of hospital stay was longer for patients with stroke (7.73 days) vs those without (6.79 days), and total charges were higher ($114,714 vs $90,455). Stroke prevalence varied by race/ethnicity: 2.73% in White patients and 3.67% in Native Hawaiian or Pacific Islanders. Patients with diabetes had a stroke prevalence of 2.95% compared to 2.75% in patients without diabetes. Interestingly, patients with acute heart failure had a lower stroke prevalence (1.42%) compared to those without (2.98%). Coronary artery disease was associated with a slight increase in stroke prevalence (2.89% vs 2.78%), whereas chronic kidney disease was associated with a decrease (2.22% vs 2.93%). Hypertension (3.95% vs 2.3%), hyperlipidemia (3.63% vs 2.21%), and atrial fibrillation (3.71% vs 2.59%) were associated with higher stroke prevalence. Private nonprofit hospitals had a higher prevalence (3.28%) compared to government-funded hospitals (2.29%).

Conclusion

This analysis demonstrates a strong positive association among various comorbidities and risk factors, which suggests potential areas for targeted intervention. Identifying and managing these variables may help reduce stroke prevalence in MPN patients, thereby improving patient outcomes and reducing healthcare costs.

References

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