Thoughts of Death and Self-Harm in Patients With Epilepsy or Multiple Sclerosis in a Tertiary Care Center

Leah P. Dickstein, B.S., Adele C. Viguera, M.D., M.P.H., Amy S. Nowacki, Ph.D., Nicolas R. Thompson, M.S., Sandra D. Griffith, Ph.D., Ross J. Baldessarini, M.D., Irene L. Katzan, M.D., M.S.

Background: Patients with epilepsy or multiple sclerosis (MS) have high risks of depression and increased risks of suicide, but little is known about their risks of suicidal ideation. Objective: We sought to (1) estimate the prevalence of thoughts of being better off dead or of self-harm among patients with epilepsy or MS, (2) identify risk factors for such thoughts, and (3) determine whether any risk factors interact with depression to predict such thoughts. Methods: A Cleveland Clinic database provided information on 20,734 visits of 6586 outpatients with epilepsy or MS. Outcome measures were thoughts of death or self-harm (Patient Health Questionnaire [PHQ] item-9), and total score ≥10 for the 8 remaining PHQ items (probable major depression). Generalized estimating equations accounted for repeat visits in tests of associations of PHQ item-9 responses with depression, age, sex, race, household income, disease severity, and quality of life. Results: Prevalence of thoughts of death or self-harm averaged 14.4% overall (epilepsy, 14.0% and MS, 14.7%). Factors associated with positive PHQ item-9 responses in epilepsy were depression and male sex, modified by poor quality of life. Factors associated with positive PHQ item-9 in MS were depression, male sex, medical comorbidity, and poor quality of life; the effect of depression was worse with greater MS severity and being unmarried. Conclusions: Among patients with common neurologic disorders (epilepsy or MS), 14%–15% reported thoughts of death or self-harm associated with illness severity, depression, quality of life, male sex, and being unmarried. Such patients require further evaluation of clinical outcomes and effects of treatment.

INTRODUCTION

Depression is a common, potentially disabling or fatal psychiatric illness that is associated with many neurologic disorders. Prevalence of major depression has been reported to be 20%–50% among patients with epilepsy, multiple sclerosis (MS), Parkinson disease, and dementia. In addition to contributing to overall disease burden, depression contributes to excess mortality, in substantial part due to suicide. Moreover, risk of suicide itself is increased in patients with neurologic disorders, including epilepsy and MS. Among patients with various types of epilepsy, the risk of suicide pooled across 29 studies was approximately 8 times greater than that in the general population. Risk factors associated with suicide among patients with epilepsy in recent large...
epidemiologic studies include co-occurring psychiatric illness, especially major depression, female sex, older age, and early-onset or recent epilepsy diagnosis.7–9 For MS, most reports have found standardized mortality ratios to range 1.8–7.5 times more than that of the general population,10–12 with few exceptional findings of lower risk.13,14 Identified risk factors for suicide among patients with MS include male sex,5,12 early onset of MS,10,12 and co-occurring psychiatric disorders.15,16

Risk factors for suicide attempts, not specific to epilepsy or MS, include previous suicide attempts, unemployment, psychiatric disorders (especially bipolar disorder and severe major depression), female sex, and limited education.17,18 In general, the presence of a psychiatric disorder and severe major depression), female sex, unemployment, psychiatric disorders (especially bipolar disorder or MS, include previous suicide attempts, and co-occurring psychiatric disorders.15,16

The 9-item Patient Health Questionnaire (PHQ-9) is a well-validated instrument that is widely used to screen for depression.23,24 Item-9 of the questionnaire addresses the presence and persistence of recent thoughts of death or self-harm, and has proved useful to screen for suicidal risk in primary care medical settings.25–28 Although few patients identified by their PHQ item-9 responses later attempt suicide, there is a significant association.29 A recent, large retrospective study found that risks of attempted and completed suicides were 10 times greater among patients reporting elevated PHQ item-9 scores, and increased with persistence of the elevated scores.29 In clinical samples with high rates of depression, PHQ item-9 can guide selection of patients who require closer assessment and might benefit from psychiatric care.20–29

In response to the need to identify patients at increased risk for suicide in medical settings, we studied patients with epilepsy or MS in an academic, tertiary care neurologic clinic to estimate the prevalence of thoughts of being better off dead or of self-harm using PHQ item-9 and evaluated covariates or potential risk factors associated with such thoughts, including depression, which was identified with the 8 remaining items of the PHQ. Because depression has a known association with suicidal ideation, we also examined whether any clinical or demographic factors influenced the risk of positive PHQ item-9 response among patients with depression.

**METHODS**

**Data Sources and Assessments**

The Cleveland Clinic Epilepsy and Multiple Sclerosis Centers have incorporated the systematic collection of patient-entered, validated measures of health status and outcomes into their clinical practice through the Knowledge Program.30 Patients complete questionnaires with electronic tablets provided in waiting rooms before each clinic visit. The responses are immediately available within the electronic health record for review by the treating physicians during each visit, who answer provider-specific questions pertaining to diagnosis and treatment. Patient-entered data, as well as clinical data from the electronic health record, are stored in the Knowledge Program database.

Two validated, self-reported, clinical assessment measures employed routinely at the study sites are the PHQ-9 to screen for depression,23 and the European Quality of Life-5D Scale, a standardized measure of health-related quality of life (QOL) applicable in many illnesses.31 In addition, neurologic disease-specific measures collected included ratings with the Liverpool Seizure Severity Scale32 for patients with epilepsy and the Multiple Sclerosis Performance Scales for patients with MS.33 The Liverpool Seizure Severity Scale is a 20-item self-reported questionnaire that assesses seizure severity in patients with epilepsy based on perceived control over seizures as well as ictal and postictal characteristics, with scores ranging from 0 (low severity) to 100 (high severity). The Multiple Sclerosis Performance Scale is an 11-item, self-reported measure of MS-related disability, of which we considered 8 items: mobility, hand function, vision, fatigue, cognitive, bladder/bowel, sensory, and spasticity, with scores ranging from 0 (no problem) to 41 (unable to perform).