

[P02.149] Diagnostic Accuracy of Neurological Problems by Primary Care and Emergency Physicians

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**OBJECTIVE:** 1. To determine the diagnostic accuracy of neurological problems in referrals for emergent neurological consultation. 2. To identify which types of neurological problems are most commonly misdiagnosed. **BACKGROUND:** Previous studies describe significant rates of misdiagnosis of stroke, seizure and other neurological problems, but there are few studies examining diagnostic accuracy of *all* emergency referrals to a general neurology service. This information could be useful in focusing the neurological education of emergency physicians. **DESIGN/METHODS:** All neurological consultations in the emergency department at a tertiary-care teaching hospital were recorded for six months. The initial diagnosis of the emergency department physician was recorded for each patient. This was compared to the initial diagnosis of the consulting neurologist and to the final ('correct') diagnosis, as determined by retrospective chart review. The study was approved by our institutional research ethics board. **RESULTS:** We reviewed 493 neurological consultations over a six month period. The initial diagnosis of the emergency department physician was correct in 65.7% (324/493) of cases, and incorrect or uncertain in 34.3% of cases (18.9% [93/493], and 15.4% [76/493] respectively). Of the 324 correctly-diagnosed neurological conditions, 73% (237/324) were stroke or seizure, compared with 6% (6/93) of incorrect diagnoses ( $p < 0.001$ ). Common misdiagnoses included neurocardiogenic syncope (11/93), peripheral vertigo (12/93), headache syndromes (16/93), psychogenic syndromes (12/93) and other non-neurological medical conditions (13/93). Often, these syndromes were initially diagnosed as a severe neurological problem, such as stroke or seizure. **CONCLUSIONS/RELEVANCE:** Our data indicate a neurological misdiagnosis rate of over one-third of all patients presenting to the emergency department. Benign neurological conditions, such as migraine, syncope and peripheral vertigo are frequently mislabeled as seizure or stroke, which results in unnecessarily urgent neurological consultations. Educational strategies that stress the emergent evaluation of these common conditions may help to improve diagnostic accuracy, and may result in better patient care.

Category - Neurologic Education

SubCategory - Epidemiology