Isolated aphasia in the emergency department: The likelihood of ischemia is low

Gabriel Casella¹, Rafael H. Linas¹, Elisabeth B. Marsh¹,²

¹ Johns Hopkins School of Medicine, Baltimore MD, United States
² Johns Hopkins School of Arts and Sciences, Baltimore MD, United States

Abstract

Objective: Aphasia is a common presentation of ischemic stroke, often diagnosed in the acute setting using tools such as the NIH Stroke Scale (NIHSS). Due to the vascular distribution of the middle cerebral artery, it is often accompanied by other symptoms such as weakness, sensory loss, or visual changes. Isolated aphasia due to ischemia is possible, but language problems mimicking aphasia syndromes can also be seen with other diagnoses such as metabolic abnormalities or dementia. In this study, we determine the incidence of aphasia-only strokes using the NIHSS, and factors associated with a higher likelihood of ischemia.

Patients and methods: Over a 2-year period, 788 patients presented to our Emergency Department with symptoms of acute stroke. Data were collected regarding patient demographics, medical history, presenting symptoms based on NIHSS, work-up results, and final diagnosis. The incidence of aphasia-only stroke was calculated.

Results: Of 788 patients, 21 (3%) presented with isolated “aphasia”. None of the 21 had infarcts on neuroimaging. Three (14%) were diagnosed with possible transient ischemic attacks and the rest with stroke mimics. Toxic/metabolic disturbances were the most common mimics (39%). Prior history of stroke or transient ischemic attack was associated with ischemia over mimic (p = 0.023).

Conclusions: Strokes affecting language without motor or sensory deficits are uncommon. In the acute setting, isolated “aphasia” is most often due to a stroke mimic; however, it can occur rarely, particularly in those with prior history of ischemia.

1. Introduction

Outcomes have improved significantly since the mid-1990s when intravenous tissue plasminogen activator (IV rt-PA) was approved for the treatment of acute ischemic stroke [1,2]. As such, eligible patients, presenting within 4.5 h from the onset of symptoms, must be quickly, yet accurately identified. Scales such as the National Institute of Health Stroke Scale (NIHSS) [1] are effective, reproducible tools designed to rapidly identify common stroke symptoms such as hemiparesis, hemianopsia, and aphasia in the acute setting. However, neurologic dysfunction, especially language deficits (the inability to correctly name, follow commands, and repeat), detected by the scale is not always caused by ischemia [3]. Given that IV rt-PA carries a 6% risk of symptomatic intracerebral hemorrhage [2], it is important to be able to identify individuals in whom the most likely cause of symptomatology is a stroke mimic, rather than vessel occlusion.

True aphasia, or difficulty with speech production and comprehension due to brain injury, is typically caused by ischemia of the left middle cerebral artery (MCA) territory. Given the areas of cortex supplied by the MCA, language deficits are usually accompanied by a combination of contralateral motor and sensory deficits, gaze deviation, and visual field cut. Other causes of “language problems” that can mimic an aphasia syndrome, especially during rapid assessment in the acute setting, include confusional states due to infection, toxic/metabolic abnormalities or dementia; migraine; and seizure [3]. Individuals with non-ischemic language deficits may be more likely to lack associated focal features such as weakness given that symptoms are not the result of dysfunction of an entire vascular distribution.

In this study, we explore the concept of aphasia-only strokes, areas of ischemia affecting only part of the MCA territory that lack other localizing signs, and the likelihood that isolated language deficits in the acute setting are due to ischemia rather than a stroke mimic. We determine the incidence of aphasia-only strokes within our population, as well as the factors most often associated with ischemia over mimic. Findings will allow for a more accurate assessment of potential rt-PA candidates.
Statistical analyses were performed using Stata version 14. Incidence of aphasia-only stroke was determined along with frequency of various stroke mimics. Student’s t-tests and chi square analysis were used to evaluate factors associated with ischemia (stroke/TIA) over mimic.

3. Results

Seven hundred eighty-eight patients were included in analysis. Two hundred forty (30%) presented with a language complaint consistent by NIHSS criteria with aphasia; however only 21 (3%) lacked other focal neurologic deficits. Demographics, stroke risk factors, and co-existing health problems were similar between groups (Table 1). However, those presenting with aphasia-only were more likely to be older, with lower NIHSS scores: 8 scored ≤1 for only mild difficulty with language, and 13 received additional points for inability to correctly answer questions or follow commands (max total NIHSS score = 7). There was no association with score pattern (number of points for best language, questions, or commands) and final diagnosis (aphasia versus mimic). Within the aphasia-only group, no patient had infarction on neuroimaging. One patient with a temporal lobe infarct was initially identified as having aphasia-only, but when examined subsequently had a co-existing visual field cut. Three of the 21 patients (14%) were diagnosed with possible TIA and the rest with non-ischemic causes of “aphasia”. Only prior history of ischemia was associated with ischemia over mimic (Table 2). Toxic/metabolic disturbances (39%), followed by seizure (11%), syncope (11%) and chronic medical problems (11%) were the most commonly diagnosed stroke mimics.

4. Discussion

Our study suggests that isolated language deficits, often diagnosed as “aphasia” by the NIHSS in the acute setting, are typically not the result of ischemia, and are more commonly due to stroke mimics such as infection, toxicity, or dementia. Compared to the entire cohort, the population presenting with isolated aphasia tended to be older, most likely given that elderly individuals are at increased risk for co-existing medical problems resulting in delirium. The group was also more likely to have lower NIHSS scores on presentation due to aphasia being their only reported deficit.
دریافت فوری متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات