

Black patients missing out on stroke treatment

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Why was the study done?

IV tissue plasminogen activator (tPA) is a clot-busting medication that can be used to treat ischemic strokes. Ischemic strokes are caused by clots that block blood flow to the brain. tPA is infused into a patient's arm through an IV. It can dissolve a clot and restore blood flow to the part of the brain that had been cut off. The tricky part is that for the tPA to work, it must be given within 4.5 hours of stroke onset. When patients are given tPA, they have higher chances of getting better from their stroke.

But more than 20 years after the approval of tPA, and despite efforts to make people aware of its use, only about 3%–7% of stroke patients actually receive the drug in the United States. The rates of tPA use among older patients, women, minorities, and those living in rural areas are even lower.¹ Mendelson et al.² considered whether patients or their caregivers refusing tPA contributed to these lower rates of tPA use, particularly among black Americans.

How was the study done?

The research team looked back at patients who had acute strokes between January 2013 and June 2015 at 15 Chicago primary stroke centers. These primary stroke centers gave these data to the American Heart Association Get With the Guidelines Stroke registry.³ This registry was started in 2003 to establish best practices for stroke treatment, share information with other member hospitals, and measure their performance.

The patients included in the study came to the emergency department within 4.5 hours from when symptoms began. Some patients were given tPA, while others were not. The research team looked at when patient refusal was listed as the only reason why tPA was not given. They analyzed what factors could have influenced this decision to refuse tPA. These included race–ethnicity, health insurance status, how they arrived (e.g., via ambulance or not), and stroke severity. Patients who had medical reasons for not being given tPA were excluded from the study.

What were the results?

There were 13,662 patients whose records were reviewed for this study. Half of them were women and nearly half (47%) were black. A total of 7.5% of all the patients or their caregivers refused treatment with tPA. More black patients refused (10.6%) compared to patients of other races (4.8%). Those who were older and had prior strokes were also more likely to refuse tPA. Health insurance and stroke severity were also associated with refusing tPA. However, even after controlling for all of these factors, black patients or their caregivers were 2.5 times more likely to refuse tPA.

What does this mean?

This study shows that black patients or their caregivers were more likely to refuse tPA, a medication that can improve how patients recover after a stroke. As neurologists, we would like all patients who can take tPA to receive it and get better. Patients may refuse treatment because they do not

know enough about it, because doctors did not fully explain the benefits, or owing to mistrust of doctors in general.

What can be done?

Neurologists can work with community-based organizations to identify cultural and community barriers to receiving tPA. They can develop educational material for different minority groups based on identified community barriers, and continue to invest in public education on acute stroke recognition and its treatments. In addition, there can be increased focus on improving physician communication, particularly among physicians who must explain tPA treatment to patients and get approval. For example, material outlining the benefits and risks of tPA can

be provided to physicians so they can inform patients. Physicians could also use visual aids to show these benefits and risks. This is not the only area in neurology where there are racial differences in care.⁴ These differences should drive neurologists and community partners to address why the differences exist and what can be done about them.

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About stroke and its treatments

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What is stroke?

Ischemic stroke, caused by a clot in a blood vessel that cuts off blood flow to the brain, is the most common form of stroke. About 8 out of 10 strokes are ischemic. The other type is called a hemorrhagic stroke (about 2 out of 10 strokes). This is caused by bleeding from a blood vessel into the brain. Symptoms of a stroke include trouble speaking, seeing, or walking, and paralysis or numbness of the face, hands, or legs. FAST is one acronym used to help remember and recognize stroke symptoms. The acronym stands for Facial drooping, Arm weakness, Speech difficulties, and Time. Time is included in the acronym because receiving therapy within a certain time period is crucial. Every minute that therapy is delayed in an ischemic stroke, about 2 million brain cells die. This means that every minute of delay increases the risk of permanent brain damage and disability. Many neurologists say “Time is brain” to emphasize the importance of receiving immediate treatment.

What are the available treatments?

In 1996, the stroke drug tPA was Food and Drug Administration (FDA)–approved for patients with an acute stroke. The drug works by dissolving blood clots. By dissolving the clot, tPA can help to restore blood flow to the brain. The outer time limit of when the drug can be given was initially set at 3 hours from stroke onset, but in 2009 it was extended to 4.5 hours. The sooner someone receives tPA, the better the odds of getting better, so it is important to go to a hospital as soon as stroke symptoms are noticed. Calling 911 immediately and taking an ambulance to the hospital can allow ambulance crews to call ahead to hospitals and alert the stroke team.

It is also important to know that tPA can only be given for an ischemic stroke, and not a hemorrhagic stroke. Giving the clot-busting drug to someone whose stroke is caused by bleeding could be fatal. Hence, before tPA is given, a patient gets a CT scan to make sure there is no bleeding in or around the brain. Other reasons why tPA may not be used include the use of blood thinners like warfarin (Coumadin), recent major surgery, or a history of a prior brain bleed. The major risk with the use of tPA is bleeding, either in the brain or elsewhere in the body.

Another newer FDA-approved therapy for stroke is mechanical thrombectomy. This procedure involves using a device that grabs clots and removes them to re-establish blood flow to the brain. As with tPA, not everyone is a candidate for mechanical thrombectomy. Carefully selecting patients allows doctors to minimize the risks and maximize the benefits of these acute stroke treatments.

The best medicine for stroke is prevention. The use of medications to control high blood pressure and high cholesterol, not smoking, and increasing exercise are the best way to prevent strokes.

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strokeassociation.org

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