What doctors want patients to know about the deadly risk of stroke

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Sara Berg, MS

News Editor

Every 40 seconds, someone in the U.S. has a stroke, which is a medical emergency that demands swift action. Meanwhile, every three minutes and 14 seconds, someone dies of stroke in this country. Stroke is the fifth leading cause of death in the U.S. and a major cause of long-term disability for adults, but it is preventable and treatable. That is why patients and families need to know more about preventing and identifying stroke.

More than 795,000 people in the U.S. have a stroke every year. About 610,000 of these are first or new strokes. Meanwhile, nearly 25% of strokes are in people who have had a previous stroke. And about 87% are ischemic strokes in which blood flow to the brain is blocked, according to the Centers for Disease Control and Prevention (CDC).

The AMA's What Doctors Want Patients to Know™ series gives physicians a platform to share what they want patients to understand about today's health care headlines and how to take charge of their health through preventive care.

In this installment, two physicians took time to discuss what patients need to know about preventing and identifying stroke. They are:

- Stephen Devries, MD, a preventive cardiologist and executive director of the educational nonprofit Gaples Institute in Chicago. He is also an adjunct professor of nutrition in Boston
- John Greenert, MD, a neurologist and stroke medical director in Seattle.

With a stroke, blood flow to the brain is blocked

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“A stroke is an injury to the brain that results from a disruption of blood flow,” Dr. Devries explained, noting the most common type is an ischemic stroke, which “is caused by a blood clot that prevents blood from flowing to part of the brain.”

“Another type of stroke happens when an artery in the brain ruptures, often under the stress of high blood pressure,” he said. This is a hemorrhagic stroke, which makes up about 13% of stroke cases, according to the American Heart Association.

Strokes are very common

“The data hasn't changed too much in the past few years in terms of incidence and prevalence of strokes,” said Dr. Greenert. “What we have seen is that every four seconds somebody is having a stroke.”

In fact, “nearly 800,000 people per year are going to have a stroke and over 600,000 of those people are having their first event, whereas the others are the repeat strokes,” he explained. “It’s still very much a leading cause of death and disability.”

Recognize stroke risk factors

“There are certain risk factors that we know certainly lead to a higher incidence or higher likelihood of having a stroke,” said Dr. Greenert. “Some of these are modifiable risk factors,” which are lifestyle behaviors and health conditions that can be changed or managed to prevent chronic diseases.

“So, people who have high blood pressure, high cholesterol, diabetes, overweight or obesity,” he said, noting that with obesity, “it can also cause them potentially to have high cholesterol, high blood pressure or diabetes as well. Then diet and exercise certainly factor in for modifiable risk factors.”

“Then we have things that are more nonmodifiable, which are things that we can’t really affect too much, and those are what you consider more genetic factors,” said Dr. Greenert. For example, “people who might have sickle cell disease are at a higher risk for stroke.”

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“Data also shows that depending on your race and ethnicity, that can actually have a higher prevalence as well,” he said.

In fact, the risk of having a first stroke is nearly twice as high for Black adults as for white adults. Also, Black adults and Pacific Islander adults have the highest rates of death due to stroke, according to the CDC.

“But age is also a big factor of nonmodifiable risk factors too—the older we get, the more likely that stroke occurs,” said Dr. Greenert, noting that “data shows that once you start reaching 55 years old, your risk for stroke doubles for every 10 years. So, from 55 to 65 and then 65 to 75, it’s doubling with each subsequent jump.”

Additionally, “if you have a family history of stroke, you’re more likely to have a stroke. That may be in part because of inherited risk factors that we see like hypertension or type 2 diabetes, but also abnormalities such as blood clotting,” he said. “Some blood clotting abnormalities are inherited, so family history is one that’s worth paying attention to.”

Strokes can happen in younger adults

Recent data from the CDC “was showing that there was about a 15% jump in terms of the number of strokes that were occurring in patients in the age range of 18 to 64, and it was a little less than 14% for 18 to 44 years old,” said Dr. Greenert. “Things like starting to develop high blood pressure and diabetes at an earlier age.”

This may be due to an increase in risk factors such as obesity, hypertension and diabetes. It also includes atrial fibrillation, which is a strong risk factors for stroke that rises with age and is more common in people with overweight or obesity.

“The other fact too is that in a post-public health emergency world where some people are leading more of a sedentary lifestyle in the sense of working from home and not getting as much exercise,” he said. “We tend to see more strokes related to substance abuse, alcohol misuse and also polysubstance abuse—cocaine or methamphetamines—in the younger population.”

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It’s important to identify atrial fibrillation

"As age increases stroke risk, it also increases the risk of cardiac disease,” said Dr. Greenert. “The abnormal heart rhythm atrial fibrillation is one of the most concerning and major modifiable stroke risk factors when it is detected.”

“The irregular heart rhythm can cause blood to form clots within your heart, and those clots can then travel to your brain to cause strokes,” he said. “Thus, it is very important to follow up with a primary care doctor or cardiologist if this is detected on a heart monitor as there are specific blood thinners that can prevent these clots from forming and medications to help control the rate of the irregular rhythm."

Symptoms of a stroke appear suddenly

Stroke symptoms are “pretty instantaneous. A clot disrupting blood flow to the brain is going to be sudden,” Dr. Greenert said. “That is why you’ll hear a lot of neurologists or others in the stroke field say that ‘time is brain,’” which is a critical medical phrase that highlights that every second counts during a stroke because about 1.9 to 2 million brain cells die per minute untreated.

“And the sooner that you’re able to recognize that and potentially get intervention or treatment, the better,” he added, emphasizing that promptly recognizing symptoms and seeking immediate emergency care is key to preventing permanent disability.

A transient ischemic attack is a warning

A transient ischemic attack (TIA) “is when blood and oxygen flow is briefly disrupted and that brief disruption can come in the form of a small clot or some type of blockage that then either gets dislodged or dissolves on its own,” said Dr. Greenert. “That blood flow and oxygen get restored to the brain tissue pretty quickly. It is often minutes to maybe a couple of hours.”

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“That is a big red flag that is saying you are at risk for having a complete stroke or a full stroke, even within the first 48 hours, but especially in the next year or two,” he said, noting that symptoms of TIA include sudden numbness or weakness, speech deficit, confusion, vision changes, loss of balance or a severe headache.

“The most recent data that’s out there from the CDC shows that if somebody has a TIA, then the chances for having a complete or full stroke within the next 48 hours is increased by 10%,” said Dr. Greenert. “There’s even some meta-analysis from *JAMA* that was published last year that shows that the incidence in terms of subsequent years after having a TIA can go anywhere from 9% up to 17% if gone unchecked.”

Be fast to identify symptoms of stroke

“The most common signs and symptoms of stroke are summarized by the mnemonic, ‘BE FAST,’” said Dr. Devries.

“B is for balance, so you’re looking for any kind of unsteadiness or instability or poor coordination of your arm or leg or one side of the body that suddenly occurs,” said Dr. Greenert. “E is for eyes, which is sudden vision loss or double vision. Blurriness can also be a component of that, but more often than not it’s going to manifest as an acute or sudden onset of double vision or loss of vision.”

“F stands for face, so if you have one side of the face that looks asymmetric or droopy on one side,” he explained. “A is for arm, but it also means leg—so one arm or one leg is weaker than the other side all of a sudden.”

“S is for speech. What we are talking about is garbled, confused or very slurred speech,” Dr. Greenert said. “T is the last one and it is time. The idea of time is that as soon as you notice the onset of symptoms, you want to call 911. You want to get to an emergency department as soon as possible.”

“In some stroke centers, we also use the T to represent terrible headache as well,” he said, “because the idea is that when you’re talking about acute hemorrhagic strokes or acute bleeding strokes, that can manifest as an acute, sudden, worst headache of your life.”

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Ultimately, though, “this is not a situation where you have to have every single one of these symptoms. It can just be one of these isolated symptoms and that in itself can be a manifestation of a stroke,” Dr. Greenert said.

A migraine can mimic a stroke

"There are certainly stroke mimics out there as well," but despite these mimics, Dr. Greenert and neurologists still strongly advise that patients get examined in the emergency department quickly for new, acute BE FAST positive symptoms.

"We just want to keep it simple because we'd rather be safe and catch something if it is actually a stroke as opposed to missing it,." said Greenert.

“Our job is to tease out whether this is more of the stroke mimic versus something actually concerning for an ischemic or hemorrhagic stroke,” he said, noting that “migraines are notorious for being those stroke mimics, but it is always better to get checked out, especially for those first-time atypical migraine events.”

“Even if you have a history of migraines, if you have a symptom that you have never had before and it’s acute and sudden, come to the emergency department and get checked out,” Dr. Greenert said.

Stroke symptoms can differ in women

Among women, stroke is the fifth-leading cause of death. Additionally, one in five women between 55 and 75 will have a stroke in the U.S. But one in five strokes are preventable, according to the CDC.

“In women, stroke symptoms can be especially challenging to sort out,” said Dr. Devries. “That’s a big problem because not recognizing the seriousness of these stroke symptoms can lead to delayed diagnosis and treatment, and a poor outcome.”

“Symptoms of stroke especially common in women include fainting, sudden general weakness, shortness of breath, confusion, agitation, and nausea and vomiting,” he said.

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“Although rare, even the new development of persistent hiccups can be the sign of a stroke.”

Additionally, there are risk factors for women that are important to be mindful of. For example, pregnancy can increase your risk for stroke, “especially with preeclampsia or eclampsia because that does increase blood pressure,” said Dr. Greenert. “Same thing with gestational diabetes. Both can lead to increased risk of stroke both during pregnancy and contribute to lifelong risk as well."

"Another factor is estrogen. Estrogen can be protective against stroke, but stroke risk can be increased with use of combined oral contraceptives for birth control, postmenopausal hormone therapy, and hormone replacement therapy for transgender individuals,” said Dr. Greenert. “Women also tend to have a higher incidence of migraines with aura, which tends to include visual symptoms such as bright lights, spots, dots or various other phenomena.

“This is important when discussing stroke risk as women with migraine with aura have higher risk for stroke and even higher risk when using hormone therapy,” he added. “It's not to say ‘don't be on estrogen.’ It's a matter of moderation and understanding risk factors, which is why it is important for women to discuss these risks with their doctors."

Calling 911 is the best option

“If you experience or witness anyone with these symptoms, the single most important step is to immediately call 911,” Dr. Devries urged. “Definitely don’t drive yourself or ask a friend to take you to the hospital.

“Calling 911 is the absolute best option and will ensure the fastest, safest and most appropriate treatment,” he added, noting not to “delay to see if the symptoms resolve. Even if they improve or resolve completely, that doesn’t exclude the possibility that a stroke has occurred or is imminent.”

Don’t take aspirin

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For patients with symptoms that suggest a possible stroke, Dr. Devries warns, “don’t take an aspirin.”

That is because “some strokes are caused by bleeding in the brain and aspirin thins the blood,” he said, noting “this could cause further bleeding and damage. Only a physician, after examination of your test results, can determine if aspirin is appropriate.”

Take steps to improve your health

“Strokes can be one of the most devastating health crises, but fortunately there’s a lot you can do to prevent them,” said Dr. Devries. “High blood pressure is a strong risk factor for strokes and making sure your blood pressure is checked and under control is essential.”

“The American Heart Association and American Stroke Association have been consistent in saying that when you’re talking about high blood pressure, you’re trying to shoot for a systolic below 120 mmHg to prevent stroke,” Dr. Greenert explained. “Doing that alone can decrease your risk of stroke by about 50%.”

“Regular checks for cholesterol and blood sugar are also important,” Dr. Devries said. “In addition to regular health exams, lifestyle choices are key to preventing strokes.”

For example, “alcohol can raise blood pressure and increase the risk of stroke, so minimizing or avoiding alcohol is important,” he added.

Make appropriate dietary choices

“Dietary choices are another foundation of stroke prevention,” said Dr. Devries. “A diet filled with potassium-rich foods that lower blood pressure—including fruit, vegetables and beans together with whole grains, less meat and, optionally, fish—has been shown to significantly reduce the risk of stroke.”

“The American Stroke Association and American Heart Association recommend the Mediterranean diet and the DASH—dietary approaches to stop hypertension—diet,” Dr. Greenert noted. “It’s hard for a lot of people to modify their diet, so start with a different

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vegetable a day or adding a couple of vegetables to your dinner."

Increase physical activity levels

"The general recommendation is that you ideally want to try to do about 150 minutes of moderate intensity exercise per week. That can be as simple as brisk walking or gardening," said Dr. Greenert. "When you're talking about vigorous physical activity, at least 75 minutes per week has been shown to be good for heart health and brain health."

"Vigorous exercising is when you go for jogs, aerobic swimming, things like that," he said. "Some people say to get 10,000 steps a day, which isn't a bad idea for moderate intensity exercise. And that can include going to the gym and running on the treadmill or going for a walk."

It's important to quit smoking

"Smoking cigarettes or vaping nicotine products are going to cause damage to your vessels and heart," said Dr. Greenert. That is why "we advocate for patients to stop smoking."

"Even if you've been a chronic smoker, the benefits of stopping and abstaining from nicotine use—whether smoking or vaping—decreases your chances overall of a stroke," he said.

Quick action means better treatment

"There are several excellent treatments for stroke," Dr. Devries said, noting that "depending on the kind of stroke, treatment may include medicine to lower blood pressure, blood thinners and procedures to remove blood clots.

"But regardless of the treatment, the best outcome is dependent on immediate medical attention," he added. "If in doubt about your symptoms, don't wait and wonder. Call 911."

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“The literature and data has shown us that the sooner that people get in and we recognize that a stroke is occurring and if they meet the criteria and qualifications for emergency treatments, then the sooner we get those patients in the better,” said Dr. Greenert, emphasizing that time is brain—which means every second counts during a stroke—so “the sooner that we get people in and save those neurons and brain cells, the better.”

Consult your primary care doctor

Dr. Greenert emphasized that it is important for adults to get established with a primary care doctor, especially if you're over 50 years old, as stroke risk begins doubling with each subsequent decade.

“Your primary care doctor can help you manage the modifiable risk factors, including high blood pressure, high cholesterol, diabetes, tobacco use, alcohol use, lifestyle factors such as diet and exercise, oral contraceptive use, and abnormal heart rhythms, particularly atrial fibrillation,” he said. “The earlier these are recognized and managed, the more likely you can avoid a stroke in the future.”

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