Physical rehabilitation was the easy part of Lynn Betts's recovery; her depression was harder to beat.

MENTAL HEALTH

Ups and downs

Strokes can shatter a person's identity and make it difficult to find the light. But there are ways to help patients cope.

BY SUJATA GUPTA

Her troubles started with a headache. Lynn Betts powered her way through and stayed up late to complete her paperwork for her job as a speech and language pathologist. Early the next morning, she was awakened by something touching her face, but when she went to brush it off, she realized she couldn't move her left arm. She

woke up her husband and told him: "I think I'm having a stroke."

It was April 2009, and Betts had indeed had a stroke. She was rushed by ambulance to the University of Virginia hospital in Charlottesville, where she spent two weeks before being moved back to her home hospital in Lynchburg for another six weeks. There, she began work to regain the basic physical skills she had lost — including walking and sitting upright.

At night, Betts says that she could hear other patients crying. She sometimes felt like crying, too. "Why do I feel down in the dumps?" she would chide herself. "I've got my second chance to live. I've got my loving family. My church, my friends." But when Betts's minister came to visit her, she confided to him: "It feels like my soul died with my stroke."

The sadness intensified when Betts got home. Just 61 years old, she found herself unable to continue working at the job she loved, and reluctantly decided to retire early. She required constant care. She could no longer drive, and missed her independence. At her next doctor's visit — four months after the stroke — she confessed that she had been feeling blue. The doctor suspected that the stroke had damaged parts of her brain that control emotions, and prescribed an antidepressant. Gradually some of her old exuberance returned, albeit with lingering physical disabilities. "I used to run up to people and give them a hug," she says. "Now I hobble to people and give them a one-armed hug."

Betts's situation is not uncommon. Almost one-third of people who have a stroke in the United States experience major depression (compared with just under 7% of people in the general population). People younger than 65, women and those with a history of depression are at greater risk. Left unchecked, depression makes it harder for patients to face the rigours of rehabilitation or to stay connected to loved ones. And a person experiencing depression is three times more likely to die in the ten years after their stroke than is a patient without depression¹.

The good news is that if people are given antidepressants in the six months after their stroke, their chances of survival improve². What is more, antidepressants can help patients undergoing physiotherapy to regain motor control, even if they aren't depressed³. Could it be that the drugs prevent the onset of depression, which dampens motivation in rehab? Or do they somehow help the brain to rewire?

Some researchers now advocate an aggressive approach to managing depression after stroke. Evidence is mounting that "every patient who doesn't have a contraindication to the use of an antidepressant should receive an antidepressant after stroke", says Robert Robinson, a psychiatrist at the University of Iowa in Iowa City.

A COMMON PROBLEM

The link between stroke and depression was first proposed a century ago. But the gloomy mood was generally believed to be the logical consequence of suffering a debilitating injury. The attitude, says Alan Carson, a neuropsychiatrist at the University of Edinburgh, UK, was largely: "Why wouldn't stroke patients be depressed? They just had a stroke!"

But in the mid-1970s, Robinson, fresh out

of medical school, began inducing strokes in rats by severing one of the arteries that supply blood to the brain. He then measured how the procedure affected the concentration of catecholamines, hormones responsible for the body's fight-or-flight response. He found that the stroke rats initially had lower levels of these hormones than the control rats⁴. The stroke rats were also more sluggish and less inclined to run maniacally on exercise wheels.

That work soon shifted from rats to humans. In 1977, researchers at Johns Hopkins University in Baltimore, Maryland, compared the mental health of two groups of people who no longer had fully functional legs as a result of either stroke or orthopaedic injuries, such as hip fractures or arthritis. The researchers found that almost half of those who had had a stroke were depressed compared with just one-fifth of those with orthopaedic injuries⁵. The study triggered a marked change in how neurologists viewed psychological complications after a brain injury⁶ and research into depression following a stroke “went from an intellectual backwater too dull for neurologists to even bother seeing”, says Carson, to being a hot topic.

A few years ago, for instance, Nada El Husseini, a neurologist at Duke University in Durham, North Carolina, compared rates of depression in two types of stroke: ‘classic’ strokes, which tend to result in long-lasting functional impairment; and transient ischaemic attacks, which have similar symptoms but are fleeting and do not even show up on a brain scans. A year on, El Husseini found, those with transient ischaemic attacks were just as likely to be depressed as those with full-blown strokes⁷. Apparently, there is something about how strokes affect the brain that triggers depression.

STIGMA ISSUES

Despite such research, the attitude persists that people who have had a stroke should be able to simply power through their depression. When Betts was recuperating in the Lynchburg hospital, she was automatically allocated speech, occupational and physical therapists. But she had to ask to see a mental-health therapist.

And although depression after stroke is starting to garner more attention, identifying and treating these patients remains problematic. In 2012, the Joint Commission, a non-profit group that accredits and certifies health-care programmes across the United States, mandated that all comprehensive stroke centres screen patients for depression before they are discharged.

Yet when Stephanie Casal, a nurse at the Stanford Stroke Center in California, evaluated how well current screening

methods worked, she was taken aback. Of the 423 patients admitted to hospital for a stroke between September 2012 and June 2013, she had to weed out those with language or cognitive impairments because the screen was not validated for those conditions. That left her with just 10% of her initial pool. Moreover, the screen asks how people have been feeling over 7–14 days (typically asking questions such as “In the past few weeks have you been bothered by: little interest in pleasure or doing things? feeling down, depressed or hopeless? sleep problems?”), yet most patients are discharged within five days. With those limitations, Casal identified just two people with depression — and both were depressed before their strokes. Given that one-third of people who have a stroke experience depression, Casal concluded that new screening tools are clearly needed⁸.

Because most people who have a stroke initially visit a hospital, screening there makes logistical — although perhaps not medical — sense. Ideally, says Nathan Herrmann, a psychiatrist at Sunnybrook Health Sciences Centre in Toronto, Canada, patients should be screened every time they visit a new health professional. If this were the case, then Betts would have been screened not just when she finally confessed to her doctor, but also during her earlier two-week stay in Charlottesville and six-week stay in Lynchburg. “You need to continually re-evaluate for these problems,” Herrmann says.

But other research suggests that screening might have little value. In 2008, Robinson selected 176 people who had had a stroke but showed no signs of depression and divided them into three groups. The first group was given the antidepressant escitalopram, a second received a psychological intervention known as problem-solving therapy and the third was given a placebo pill. The patients were then evaluated for depression over 12 months⁹. The results were startling. Of the participants who completed the trial (27 dropped out before it started), those who received no intervention were twice as likely to develop depression as were those going through problem-solving therapy, which entailed having patients visit psychologists for 12 sessions and work through problems using a seven-step model. Furthermore, patients in the control group were more than four times more likely to develop depression than those on the antidepressant. That suggests that patients should consider therapy even if their early depression screen comes back negative.

Further support for this idea came from a 2011 study³ by French researchers, who discovered that when they gave the antidepressant fluoxetine to people who did not have depression but did have weakness or paralysis on one side of the body after a stroke, the patients’ motor recovery soared. The researchers speculated that the drug enhanced the brain’s ability

to heal itself, but another possibility is that the antidepressants kept depression at bay and helped patients to push through rehab. The French trial involved just over 100 participants and closed after only three months, so several labs are now working to replicate those results by assessing thousands of individuals over longer time frames.

GENERAL PRESCRIPTION

If antidepressants really do protect against depression and enhance motor recovery, reasons Robinson, why not prescribe them to all people who have a stroke? Waimei Tai, a neurologist at the Stanford University School of Medicine, says that she prescribes the drugs to anyone who has had a stroke and has depression or motor problems, unless their language is impaired. Like any drug, antidepressants do not work for everyone and do have side effects, ranging from dry mouth and digestion issues to a slightly increased risk of future stroke. “These drugs are not benign,” Tai says.

And, says Allan House, a psychiatrist at the Leeds Institute of Health Sciences, UK, the recovery process looks “more like grief than a mental illness”. That means that unless the use of antidepressants to improve motor recovery is validated, prescribing them to every patient is akin to putting every grieving widow on drugs straight after their spouse’s death. Some mourners will rebound on their own; others may need additional help.

Nor are medications a fix-all. A stroke is an earthquake that shatters routines and relationships. Betts says that her husband went from a loving equal to being her caregiver. Her career came to an abrupt end. She could no longer hold her grandchildren for fear of dropping them. She would have loved regular visits with a skilled mental-health therapist. “Just a pill doesn’t cut it,” she says. But Betts is grateful for the antidepressant, which she continues to take. And now, five years later, she can speak more positively about the experience that has left her unable to walk unaided. She now has time, she says, to just “sit and listen to my grandchildren”. ■

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