

# Healing Failing Hearts

Treatment and education are improving the outlook for the common, costly and often misunderstood problem of heart failure.

BY MARY ANNE DUNKIN



**RUSS BRYANT**

At 28, Marie Marsden had just given birth to her second child in Indiana when she began to notice something was not right with her body. “People said, ‘you just had a baby – it’s going to take time,’” the now-Atlanta resident recalls. But Marsden knew there was something more going on.

A trip to the emergency room (ER) revealed an apparent case of walking pneumonia. A second frantic trip, just two days later, revealed a more sinister diagnosis – peripartum cardiomyopathy (PPCM), a form of heart failure that occurs during the last month of pregnancy or soon after delivery. Marsden spent the next week and a half in the hospital intensive care unit (ICU) where doctors got her condition under control and began life-saving treatment.

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## An Increasing Problem

While the circumstances of Marsden’s diagnosis were uncommon – heart failure is a complication of fewer than one in 2,000 deliveries by some estimates – the diagnosis of heart failure among older people is exceedingly common.

Nationwide, about 6 million people are living with heart failure, a figure that is expected to increase 46 percent, to 8 million, by 2030, according to the American Heart Association’s (AHA) 2017 Heart Disease and Stroke Statistics Update. While Georgia tends to track cardiovascular disease in general rather than heart failure specifically, the state’s rate of cardiovascular disease overall is higher than the national average – Georgia has the 12th highest death rate from cardiovascular disease in the nation.

“It turns out heart failure is the most common diagnosis in hospitalized patients over 65,” says Dr. Michael Balk, a member of the Metro Atlanta AHA Advisory Board and chief quality officer at Atlanta’s Emory Healthcare. Among Medicare recipients, there are more hospital admissions for heart failure than for all forms of cancer combined, he says. Heart failure also has one of the highest readmission rates during the first 30 days after discharge, and about half of people discharged with heart failure are back in the

hospital within six months.

Nationally, the cost of treating heart failure has been estimated at between \$37.2 billion and \$39.2 billion – a figure that stops far short of reflecting the actual cost of heart disease in terms of lost work time, quality of life and life itself.

“In Atlanta alone, heart failure costs \$28 million annually in work absenteeism,” Balk says. “One out of three patients with heart failure does not return to the workforce.” And about half of people with heart failure die within five years.

Yet many people know little about heart failure – what causes it, how it is treated or even what it is. Efforts throughout the state are working to change that as well as to improve treatment and reduce its impact on the economy and the lives and longevity of those affected.

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## Understanding Heart Failure

While the name sounds like the heart has failed and stopped beating, heart failure actually means that the heart is not pumping blood as efficiently as it should. As a result, the kidneys may cause the body to retain fluid and salt (a condition also referred to as congestive heart failure).

“People gain weight due to fluid buildup in the legs, feet and maybe even their stomach,” says Balk. “They may have to loosen up their belt a couple of notches, and they can feel tired and weak.”

For many, like Marsden, fluid builds up in the lungs, making it difficult to breathe, particularly when lying down. “I told a friend, ‘if I go to sleep, I am not going to wake up,’” she recalls of the day she made her second trip to the ER and received the heart failure diagnosis.

Heart failure can have a number of causes, including damage from a heart attack, uncontrolled high blood pressure, blockage of a coronary artery, diabetes or problems with the heart’s valves. It occurs in four stages – ranging from no symptoms in the first stage to symptoms of fatigue and difficulty breathing even at rest in the fourth – and typically progresses over time.

Less commonly it comes on quickly, as it did for Marsden, as the result of pregnancy, a virus that damages the heart muscle or a severe emotional trauma.

Other cases can appear to come out of the blue, as well, because patients don’t realize they have risks for developing the condition or don’t know the signs and symptoms, so are not diagnosed until the later stages, says Dr. Jennifer Yeh, an interventional cardiologist at Memorial Health in Savannah. “Particularly for people who don’t realize they have heart failure, they come to the ER acutely because it sneaks up on them and they don’t realize what is going on,” she says. “They may come in with extra fluid and not really understand why they are short of breath.”

“When you think of some of the symptoms – you are short of breath, you are feeling tired and weak – how many middle-aged people who are overweight and don’t exercise sometimes feel tired and out of breath?” Balk says. “It is really common.”

If you are experiencing such symptoms, it’s important to bring them to your doctor’s attention, he says. An electrocardiogram (EKG) and blood tests can make the diagnosis.

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## Established Treatments

Once heart failure is diagnosed, treatment falls into one of three general categories: medications, surgery and devices.

**Medications:** For most people, medication treatment for heart failure will include diuretics, a class of drugs often referred to as water pills, that cause you to urinate more frequently to prevent or reduce fluid buildup in the body. In most cases, diuretics will be used along with one or more other drugs.

“The therapy for heart failure is like a recipe for a cake or cocktail,” says Dr. Stephanie Dunlap, professor of medicine and medical director of the cardiac care unit at Augusta University Health. “You can’t have a Manhattan with just bourbon; you have to have

some sweet vermouth. You can't have a pound cake with just flour; you have to have eggs, butter, sugar and vanilla.”

Other medications in the cocktail may include:

Angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers. These two types of drugs relax the blood vessels to improve blood flow, lower blood pressure and decrease the heart's workload.

Beta blockers. This class of drugs slows the heart rate, reduces the risk of abnormal heart rhythms, lowers blood pressure and improves heart function.

Aldosterone antagonists. A class of drugs referred to as potassium-sparing diuretics. By inhibiting the action of the hormone aldosterone, they help the body to eliminate fluid without causing the body to lose potassium as other diuretics do. They also have properties that keep heart failure from worsening.

Digoxin. This drug, also referred to as digitalis, is prescribed to increase the strength and efficiency of heart muscle contractions or control the rate and rhythm of the heartbeat, leading to better blood circulation.

Angiotensin receptor-neprilysin inhibitors (ARNis). A new class of drugs reserved for patients for whom other medications have failed to control heart failure. ARNis have effects similar to those of ACE inhibitors and beta blockers. They also block proteins, which are overproduced in people with heart failure and can lead to organ damage.

**Surgery:** In some cases surgery may be used to correct the underlying cause of heart failure. For example, if a faulty valve is causing heart failure, surgery to replace the valve may improve the heart failure. Similarly if severely blocked arteries are contributing to heart failure, coronary bypass surgery will allow blood to flow to the heart more freely. In other cases, surgery may be necessary to place implantable devices.

**Devices:** Implantable devices are used to monitor or regulate the heart's rhythm or even take over the work of a failed heart. These devices include:

Pacemakers. Used for more than half a century, pacemakers are small devices that send electrical impulses to the heart to maintain a healthy rate and rhythm. For heart failure, doctors may use a pacemaker that sends timed electrical impulses to both of the heart's lower chambers so that they pump in a more efficient, coordinated manner. In some cases this treatment, called cardiac resynchronization therapy (CRT), helps heart function get better, says Dr. Balk. “We have seen people with weak hearts, and after CRT their heart function gets back to normal,” he says. “Unfortunately not everyone is eligible, and it doesn't work for all patients.”

Implantable cardioverter-defibrillators (ICDs). Similar to a pacemaker, an ICD is implanted under the skin of the chest with wires leading through veins and into the heart. ICDs monitor the rhythm of the heart and will deliver a shock to return the heart to its normal rhythm if it starts beating abnormally. Some people with heart failure require both a pacemaker and an ICD.

Left ventricular assist devices (LVAD). An LVAD is an implantable mechanical pump that helps the left ventricle of the heart pump blood to the rest of the body. Many people became familiar with LVADs in 2010 when former Vice President Dick Cheney received a device while waiting for a heart transplant. Although LVADs were first used for people like Cheney who were waiting for a donor heart, increasingly they are used as a long-term alternative to heart transplants for patients with severe heart failure.

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## Improving Care

While new treatments for heart failure are in development, some of the most important efforts focus on making the best use of treatments that are already available.

In the hospital setting, an AHA program called Get with the Guidelines – Heart Failure is improving outcomes and reducing

readmissions. The goal of the program is to improve care by promoting consistent adherence to the latest treatment guidelines.

Hospitals that participate can receive different levels of public recognition – bronze, silver and gold – which reflects the amount of time they have met certain achievement measures. Two advanced levels of recognition – Silver Plus and Gold Plus Quality Awards – acknowledge hospitals for consistent compliance with quality measures.

Numerous studies have shown that when the guidelines are followed, patient outcomes improve significantly and hospital readmissions – one measure of outcomes – are reduced. Dr. Dunlap has seen the effects first hand. Since adopting Get with the Guidelines in January 2018, Augusta University Health’s 30-day readmission rate decreased from 28 percent to less than 10 percent, she says.

Several hospitals have special heart failure clinics and formal systems of getting people treatment before it becomes a medical emergency.

One of those is Savannah’s Memorial Health. Now a part of the Hospital Corporation of America, the hospital participates in a program called Care Assure, which identifies high-risk patients and ensures they get the care they need, says Dr. Yeh.

“Basically what the program does is it has a trigger to recognize high-risk heart failure patients, and then once they are pulled out by their trigger – whether it’s an EKG that shows they have abnormal pumping function or the diagnosis they are admitted with – [it alerts] a team of nurse navigators,” she says. “Those navigators then contact the medical team to confirm the diagnosis and meet with the patient and schedule follow-up appointments and ensure they get appropriate follow up.

“The process is a complex one, with a lot of work on our end, but it really is for the advocacy of the patients,” says Dr. Yeh. “They are getting education at multiple points, from the minute they enter the hospital through their Care Assure nurse or at cardiac rehab. This program is vital because we all recognize that an informed and educated patient is a healthy patient.”

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## Saving Lives

Indeed, education is a crucial part of treatment. It is also important to reducing heart failure risk in the first place. “Prevention is always better than trying to treat, and that is the message we are trying to get out there,” says Dr. Balk.

As with other forms of heart disease, Dr. Balk says heart failure prevention lies largely in following Life’s Simple 7: manage blood pressure, control cholesterol, reduce blood sugar, get active, eat better, lose weight and stop smoking.

“The term heart failure itself can be very scary for patients,” says Dr. Shazib Khawaja, chief of interventional cardiology and medical operations leader for Tanner Health System in Carrollton. But there’s good news.

The fact that heart failure is increasing is a sign that more people are living with heart disease and surviving cardiovascular events that would have once been fatal, he says. Also, improvements in treatment are enabling people to live longer – and better – with heart failure.

“Treatment has really changed it,” says Dr. Khawaja. “There are a lot of treatments available, especially in the last decade. The drugs being made now have changed how patients feel every day and their prognosis. I am excited about it because it gives you a great opportunity to take care of your patients that we never had before.

“When somebody hears heart failure, they think they are going to die,” says Dr. Khawaja, “but that has certainly changed and that has evolved, and there is great hope for patients now.”

Marsden is living proof of that change. Sixteen years after her diagnosis, she is managing with an LVAD, a device she says literally saved her life – and quite likely the lives of her son and those in nearby cars – the day in 2016 when her heart stopped as she drove her son to school in Atlanta traffic.

“My defibrillator kicked in and started shocking me while I was driving in the HOV lane,” she says. She managed to get to safety and was taken by ambulance to Piedmont Hospital, where her doctor told her what had happened.

“My LVAD kept me alive and everybody around me,” she says. “Had I not had the LVAD, I would have dropped dead. When my heart stopped, my LVAD kicked in and kept my heart pumping. Had I not had it, I would not be here today.”