

FORAY



Our young population has a sudden death scare staring it in the face — and doctors tell you this comes straight from the heart and is thus more fatal than any other youthful affliction. The new phenomenon of sudden cardiac deaths has risen alarmingly over the last few years, making doctors superspecialise in electrophysiology which basically means giving electric shocks to an arrested heart and wiring up the vital organ. **GAURI KOHLI** explores this new ailment which has hit India twice as much as the US

FATALLY YOUNG

Twenty five-year-old Raman Sharma from Dehra Dun suddenly fell unconscious at home last year. He was rushed to hospital but could barely be revived. Several tests were conducted, including the ECG, and Raman's heart functioning was found to be just 25 per cent. This despite the fact that he was hale and hearty at the time of the affliction, never had a history of any heart ailment or even a hint of a breathing problem.

Raman is one of those alarmingly growing cases of young men and women being stricken with sudden cardiac death, a fatal episode traditional to late middle age and old men.

Raman was lucky to have survived this brush with death as he got specific shock therapy in the emergency situation. Today, his heart function has improved by 30 per cent in three months.

Raman is not the only one to have suffered a cardiac problem at a young age. Twenty seven-year-old Vishal Sood, a Jammu-based businessman, suddenly felt breathlessness and dizzy and fell due to loss of consciousness. His heart function decreased to mere 30 per cent of the normal. He needed several shocks to bring his heart beat back. He has been given electric shocks thrice in the last two years and is now recovering from what could have been a fatal short circuit in his heart. What's more shocking in Vishal's case is that his condition was triggered by a normal viral infection.

Though Raman and Vishal were survived, there are many others who succumb to this fatal and unseemly problem. Estimates by specialists tell you that 10 per cent cases of sudden cardiac deaths are young healthy individuals who have previously been asymptomatic.

More alarmingly, the trend has caught up in India and the age group of 30-40 years is highly vulnerable, doctors say. As per a recent study by Medtronic Global, a leading medical technology company, there are about

360,000 out of hospital sudden cardiac arrest deaths in India annually, contributing to 15 per cent of cardiovascular mortality which is twice as much in the US.

Estimates of sudden cardiac arrests in India say that 37,000 cases occur in the age group of 25-44 and this figure goes up to 145,000 in the age bracket of 35-64. The prevalence of heart failure in India is about 11.6 million patients, twice that of US.

According to Dr Vanita Arora, an electrophysiology cardiologist at the Indraprastha Apollo Hospital: "There are many occasions when you have had a sudden death in your family and you don't know the reason for it. This might be a sudden cardiac death. In this situation, the patient's heart stops functioning immediately. An incident of sudden cardiac death catches you completely unawares and gives you very little or no time to react. There are 3-4 patients of sudden cardiac arrests that are reported at Apollo daily."

The main reason behind this syndrome is sedentary and stressful lifestyle and bad eating habits among this age group. The heart attack leaves dead muscle in heart which is also known as scar. This scar is the reason for these patients to be at risk of development of faster heart beats causing a sudden cardiac death. Coronary Artery Disease is the major risk factor for a sudden cardiac death.

"There are some genetic disorders due to which despite heart function being normal and no scar in the heart there can be sudden cardiac death in patients. The heart muscle is thickened in these patients and this thickened abnormal muscle is the cause of sudden cardiac death," says Dr Arora.

The reason for a sudden cardiac death is arrhythmia. An arrhythmia is a change in the regular beat of the heart. The heart may seem to skip a beat or beat irregularly or very fast or very slowly. Says Dr Arora: "Many a times there is no major cause of arrhythmia, but there are many secondary reasons which can cause it

- ### THE ALARM GRAPH
- In India, there are about 3,60,000 out-of-hospital SCA deaths annually contributing to 15% of CV mortality. This is twice as much as in the US
 - In-hospital cardiac arrest varies from 30% to 200%
 - 400 ICDs were implanted in India for primary and secondary prevention last year
 - Prevalence of HF in India is about 11.6 million patients, twice of US
 - The cost of CRT varies from Rs 3.5 lakh to Rs 8 lakh in case there's a need for an ICD
 - 20% of heart attacks are linked to sudden cardiac death

like stress, excessive intake of caffeine, tobacco, alcohol, diet pills and even medicines taken for cough and cold. It's advisable to check with your doctor or see a cardiologist who is specially trained to deal with these misbehaving heart beats and they are called electrophysiologists.

Electrophysiologists are specialists who can well take care of this most critical aspect of heart but are not too many. In a country like America, this electrical wire inbuilt in the heart is well taken care of by this non-descript tribe of doctors and a lot of sudden cardiac deaths are averted.

Dr Balbir Singh, senior consultant Electrophysiology & Interventional Cardiology at Indraprastha Apollo Hospital explains: "Sudden cardiac death is caused by the rapid and/or chaotic activity of the heart known as ventricular tachycardia (fast pulse) or ventricular fibrillation (uncoordinated contraction of the cardiac muscle of the ventricles in the heart). This is the problem of

electrical conduction system of the heart and should not be confused with a heart attack (myocardial infarction). Heart attack is caused by a blocked blood vessel leading to loss of blood supply to a portion of the heart muscle."

What's more astonishing is that some people can also experience sudden cardiac death during heart attack. "People are scared of heart attack but do not understand the concept of sudden cardiac death. Also, 20 per cent of acute heart attacks are associated with sudden cardiac death," Dr Arora adds.

Says Dr Anil Dhall, electrophysiology cardiologist at Max Healthcare: "The risk of sudden cardiac death is high in patients who are survivors of ventricular tachycardia, ventricular fibrillation or sudden cardiac death. Patients who had previous heart arrest and who have abnormal heart rhythm are also victims of this. A fast heart rhythm which keeps returning and cannot be controlled with drugs, has higher

risk of sudden cardiac death. It can be even caused by side-effects from drug therapy."

Patients who feel that their heart beat goes very fast and experience a fluttering in their chest or notice a skipped heart beat do have some chances of arrhythmia. Other symptoms are dizziness, fainting spell, difficulty in breathing or chest discomfort.

Sudden cardiac arrest is a serious problem and the treatment is also not easy. There are devices like pacemakers and ICDs which can be used to prevent further damage and control the heart rate. In severe cases, both devices have to be installed in a patient at the same time. The use of this combo device is part of cardiac resynchronisation therapy (CRT) which is an innovative way to relieve congestive heart failure symptoms by improving co-ordination of heart's contractions.

"Implantable Cardioverter Defibrillator (ICD) is the device which monitors the heart's electrical conduction system and delivers electrical energy (shock) to the heart to convert VT/VF to a normal rhythm. ICD's do much more than it is thought and have been proven to be 98 per cent effective in treating these ventricular arrhythmias and preventing sudden cardiac death," Dr Arora adds.

An ICD is about the size of a small stopwatch and is implanted in the upper chest, below the clavicle bone. It continuously monitors the electrical conduction system of the heart, watching for dangerous patterns and delivering electrical impulses when needed that may range from a tiny pulse like a cardiac pacemaker or a life-saving shock that can return the heart to normal rhythm.

As per the Medtronic Global study, 400 ICDs were implanted in

India for primary and secondary prevention last year. Another reason why many patients succumb to a sudden cardiac arrest is because they are unable to afford an ICD. The cost of cardiac resynchronisation therapy varies from Rs 3.5 lakh to Rs 8 lakh in case there's a need for an ICD.

"Our heart is also enmeshed with a wiring for electric circulation. If there is something amiss in this wiring, you need a 24x7 mechanic to avert this short circuit. So, it's essential to evaluate your heart's electric system and put in place the ICD that can save you from the unknown catastrophe. Surprisingly, short circuit can be caused by an apparently simple viral infection," says Dr Arora.

When this short circuit happens, the heart muscles start frantic movement. After heart attack also, the scarred part of the heart muscle becomes electrically charged and frantic movements takes place. But this can be averted.

Since most people are unaware of this short circuit in the heart phenomenon, they are unmindful of the upheaval it can cause. Heart attack does not necessarily kill but if the electric wiring goes awry, survival chance is nil. Yet, we are afraid more of a heart attack and less of sudden death caused by this short circuit in the heart.

An echo cardiogram can give the premonition of whether you would be taken unawares by this short circuit. Family history should also be a marker. Some victims may also have a genetic defect in the heart.

The problem of sudden cardiac death has reached an alarming stage even in developed nations like the US, say doctors. "In America, the total number of fatalities due to sudden cardiac death are more than that of lung cancer, breast cancer and AIDS combined," Dr Singh points out.

Now, that's pretty alarming for a nation which dotes on its healthy young population.

