

### Protecting Tender Hearts and Preventing Premature Deaths

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#### COLUMN ARTICLE

Mr. John Smith, British member of parliament died at the age of 54, shortly after he delivered his speech at a fundraising dinner party. Cause of death-massive heart attack. Mr. Jose Peralta, New York senator died at the age of 47 shortly after he took office, cause of death-heart attack.

Brittany Murphy, American actress died suddenly just three weeks after her World film premiere in Los Angeles at age of 32. Newcastle footballer died due sudden cardiac arrest on the football pitch during one of the important matches and his death was at a tender age of just 30. There are many more similar stories and one can go on and on. These are kind of news that we get to hear or see when we switch on our television set or get to read in the newspaper delivered to our doorsteps. But there are several similar events or incidents that happen nearly every day and even around us. Some of these may even be our own family members, relatives, friends, work colleagues and neighbors. But these deaths do not make the headlines!

Cardiovascular disease is a leading cause of death globally. Nearly 18 million people die every year all across the globe due to cardiovascular disease that includes heart attacks and strokes and this accounts for almost one-third of all deaths worldwide.

Heart attack and stroke is no longer disease of old age and men alone as earlier thought. In the last ten to fifteen

years it has been recognized that it can strike younger population, women and normal healthy looking individuals. They can strike suddenly and they can strike hard. The first heart attack or stroke can be the most fatal. So essentially no one should assume that they are immune to this deadly strike or medical problem until he or she has been adequately screened.

One out of five survivors of heart attack are below the age of 40. It is estimated that the risk of having a heart attack below the age of 40 is increasing by 2% every year. It is often asked as to what happens after the first heart attack in people who are relatively young and in particular below the age of 50. The chances of survival for such individuals is unfortunately less than 50%. In addition, if they do survive their chance of having a second heart attack within the next five years is almost 18%.

The reason as to why heart attacks in younger age are usually fatal because the extra blood vessels or channels called collaterals that can bypass a narrowing in heart blood vessel is underdeveloped or not developed at all. As a consequence the blood supply to the heart muscle is jeopardized and that would result in heart attack. This is now well known from Young-MI registry which collected data from a study on more than 2000 individuals less than 50 years of age who had heart attack in two large hospitals in the United States of America between years 2000 and 2016.

People must therefore realize that being young is not absolute immunity and certainly does not provide an absolute protection from cardiovascular diseases or deaths related to same. People must therefore begin to accept that heart attack and stroke both are threat and the threat is real.

These young individuals must therefore have cardiac screening and assessment of their risk of future cardiovascular disease. They must also have screening and assessment for risk factors like hypertension, Diabetes Mellitus, high cholesterol etc. If risk factors are identified, they must then be managed adequately to control them to satisfactory limits. At risk individuals must also be aware of symptoms and signs that they can expect during a heart attack or stroke and also where and how they can seek urgent medical attention.

There are some non-traditional risk factors for heart attack and stroke that have been recognized in the recent years. Just for example low birth weight, high resting heart rate, abnormal heart blood vessels since birth, abuse of drugs like cocaine and Amphetamine are some of them.

In the recent years it is not uncommon to witness or hear that a high profile and healthy sportsman or elite athlete died suddenly on the pitch while participating in a competitive sports. These young men and women are supposedly very fit, active and healthy. The sudden collapse or death in such individuals is not usually due to heart attack but due to very abnormal arrhythmia or electrical malfunction of the heart that sets off during intense physical stress like during a sporting or athletic event. These can set off in a structurally normal or abnormal heart. These are however lethal arrhythmia that can lead to sudden death if instant medical help is not received. The chances of survival decreases by 10% every minute that has passed. Hence if no medical attention is received in 10 minutes, the chances of survival for the victim is almost zero.

It is therefore very essential that these young sportsmen and athletes are very well screened prior to their participation in competitive sports or athletic events. Screening is generally simple and straightforward. It begins with a brief consultation with the cardiologist who does the basic cardiac assessment followed by risk stratification for future

heart attack or stroke as well as sudden cardiac death due to structural or likely abnormal conduction in the heart. This is followed by tests like ECG, Echocardiogram, Stress ECG (Treadmill ECG test), Holter monitoring (Rhythm monitoring device) and Cardiac CT (scanner to look at the heart arteries directly). In addition, certain lab tests are done. There may be additional special laboratory tests that might be requested depending on the need. There is a special panel of tests that are reserved for high risk group patients and these may be required depending on initial evaluation.

Depending on findings from initial evaluation, therapy is then recommended. If there is a risk of sudden cardiac death from a dangerous heart rhythm, then such individuals are implanted with a defibrillator (Implantable Cardiac Defibrillator-ICD). These devices can detect abnormal heart rhythm and can then deliver a shock to avert the asynchronous beating of the heart and eventually prevent it coming to a standstill.

Increasing awareness for heart attack in young and sudden cardiac arrest is still a challenge in certain parts of the world. However strategic planning and well rooted campaign can overcome this barrier and certainly will go long way in protecting young hearts and preventing premature deaths. Educating general and at risk population and conducting screening program are some of the ways that above objectives can be achieved.

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