Bernie Sanders, Michael Bloomberg and Heart Disease

By Chuck Dinerstein, MD, MBA — February 19, 2020

The Democrats have an additional health issue besides Medicare for All: The cardiovascular status of the Vermont Senator and that of the former mayor of New York. It's time to look to a physician for explanations, rather than Drs. Google and Facebook.

In actuality, the two candidates reflect two-sides of the heart disease coin. Mayor Bloomberg underwent placement of a stent in one of his coronary arteries when he was found to have apparently asymptomatic "heart disease" in a screening stress test. Senator Sanders, on the other hand, underwent placement of a stent after he had a symptom, a heart attack. Let's break this down a bit.

The coronary arteries supply blood to the heart, enabling it to do its job, pumping blood to everywhere else. When the heart works harder, either by pumping faster (increased heart rate) or pumping harder (increased systolic blood pressure, the upper number, is a useful biomarker), the arteries can enlarge slightly to accommodate more flow to the heart, a very intricate muscle. [1] Oxygen supply increases to meet increased oxygen demand.

With atherosclerosis, the ability of the coronary arteries to expand is lost and the inner lining becomes progressively narrowed. At some point, the exertion of the heart overwhelms its ability to
get sufficient oxygen, and it causes pain. That pain is what we refer to as angina, causing chest pressure or discomfort. It’s relieved when the balance is restored between the heart’s oxygen supply and demand. In some instances, the artery will close, and no further blood can get to the portion of the heart it is supplying. The tissue dies, a condition we describe as a myocardial infarction or heart attack. In other instances, small bits of the artery will break off and travel downstream and also occlude a small vessel. This is called atheroembolism, but its effect is the same: the individual suffers a heart attack. Senator Sanders had a myocardial infarction, and a portion of his heart muscle died. We will return to this in a moment.

Not everyone is as lucky as Senator Sanders; some people die from heart attacks, and others are left permanently disabled. It is better to avoid a heart attack, which is why we are bombarded with all the dietary and exercise advice, and which explains the multi-million dollar market for statins, stents and surgery.

Let us return for a moment to angina, that intermittent pain that comes when oxygen supply and demand are out of sync. Not everyone is active enough to outpace their oxygen supply, even when it is limited. You don't need a great deal of extra work by the heart to sit on a couch and watch Netflix. To detect those asymptomatic individuals, who are nevertheless at risk, physicians have developed stress tests. There is a whole range of them, but they all increase the work of the heart and look for signs of oxygen mismatch. The traditional stress test involved a graded increase in walking on a treadmill with an EKG monitor. If the EKG changes, you knew the heart's oxygen was imbalanced and could then search for the underlying cause.

Today, our tests are more sensitive, and we can identify a mismatch in oxygen supply and demand by watching the blood flow using radioactive tracers, before and after exercise. We needn't even walk that treadmill any longer; we can give you medicines to increase your heart's rate of beating and the strength of its contraction. Mayor Bloomberg failed one of these stress tests, and upon examination of his coronary arteries was found to have a blockage that might result in a heart attack. To prevent that from happening, he had a stent placed.

If you measure “heart disease” as having a stent in your coronary arteries, both presidential candidates have heart disease. On the other hand, if you have a heart attack and lose some heart muscle, there may be additional, longer-term problems. The most common would be congestive heart failure, or CHF, in which the heart is unable to pump the blood efficiently, leaving you short of breath and with swelling in your legs. That would lead you to say that Senator Sanders' condition is different than Mayor Bloomberg's, and in that case, you would be right (sort of).

Heart disease is too general a term to quantify the health of both men. What we want to know is whether they are going to weather a fierce electoral battle and then four years in the White House. That is problematic for us as an electorate. It is also a problem for physicians trying to determine and advise the best treatment for any individual.

More and more studies are no longer describing a patient's heart disease as angina, myocardial infarction, or congestive heart failure. They are using algorithms to predict the 10-year risk of death, or other cardiovascular events, based on the patient’s present state of health. [2] Truly transparent health information would allow us to calculate that risk for all the candidates, as well as
the President. But that will probably happen a day or so before the Medicare for All bill is signed into law.

Notes

[1] That it is a muscle always threw me on the practice examinations, which asked whether the heart was part of the cardiovascular or muscle system. Just kidding: everyone knows it’s both!

[2] You can find a risk calculator for asymptomatic patients designed by the American College of Cardiology here [2].

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