

Apart from its sadness, Tim Russert's death this month at 58 was deeply unsettling to many people who, like him, had been earnestly following their doctors' advice on drugs, diet and exercise in hopes of avoiding a heart attack.

Mr. Russert, the moderator of "Meet the Press" on NBC News, took blood pressure and cholesterol pills and aspirin, rode an exercise bike, had yearly stress tests and other exams and was dutifully trying to lose weight. But he died of a heart attack anyway.

An article in The New York Times last week about his medical care led to e-mail from dozens of readers insisting that something must have been missed, that if only he had been given this test or that, his doctors would have realized how sick he was and prescribed more medicine or recommended bypass surgery.

Clearly, there was sorrow for Mr. Russert's passing, but also nervous indignation. Many people are in the same boat he was in, struggling with weight, blood pressure and other risk factors ? 16 million Americans have coronary artery disease ? and his death threatened the collective sense of well-being. People are not supposed to die this way anymore, especially not smart, well-educated professionals under the care of doctors.

Mr. Russert's fate underlines some painful truths. A doctor's care is not a protective bubble, and cardiology is not the exact science that many people wish it to be. A person's risk of a heart attack can only be estimated, and although drugs, diet and exercise may lower that risk, they cannot eliminate it entirely.

True, the death rate from heart disease has declined, but it is still the leading cause of death in the United States, killing 650,000 people a year. About 300,000 die suddenly, and about half, like Mr. Russert, have no symptoms.

Cardiologists say that although they can identify people who have heart disease or risk factors for it, they are not so good at figuring out which are in real danger of having an attack soon, say in the next year or so. If those patients could be pinpointed, doctors say, they would feel justified in treating them aggressively with drugs and, possibly, surgery.

"It's the real dilemma we have in cardiology today," said Dr. Sidney Smith, a professor of medicine at the University of North Carolina and a past president of the American Heart Association. "Is it possible to identify the group at higher short-term risk?"

What killed Mr. Russert was a plaque rupture. A fatty, pimplelike lesion in a coronary artery burst, and a blood clot formed that closed the vessel and cut off circulation to part of the heart muscle. It was a typical heart attack, or myocardial infarction, an event that occurs 1.2 million times a year in the United States, killing 456,000 people.

In Mr. Russert's case, the heart attack led to a second catastrophe, an abnormal heart rhythm that caused cardiac arrest and quickly killed him. An electric shock from a defibrillator might have restarted his heart if it had been given promptly when he collapsed at his desk. But it was apparently delayed.

Dr. Smith and other cardiologists say the main problem is that there is no way to figure out who has "vulnerable plaques," those prone to rupture. Researchers are trying to find biomarkers, substances in the blood that can show the presence of these dangerous, ticking time-bomb plaques. So far, no biomarker has proved very accurate.

Mr. Russert's heart disease was a mixed picture. Some factors looked favorable. There was no family history of heart attacks. Though he had high blood pressure, drugs lowered it pretty well, said his internist, Dr. Michael A. Newman. His total cholesterol was not high, nor was his LDL, the bad type of cholesterol, or his C-reactive protein, a measure of inflammation that is thought to contribute to plaque rupture. He did not smoke. At his last physical, in April, he passed a stress test, and his heart function was good. Dr. Newman estimated his risk of a heart attack in the next 10 years at 5 percent, based on a widely used calculator.

On the negative side, Mr. Russert had low HDL, the protective cholesterol, and high triglycerides. He was quite overweight; a waist more than 40 inches in men increases heart risk. A CT scan of his coronary arteries in 1998 gave a calcium score of 210, indicating artery disease ? healthy arteries do not have calcium deposits ? and a moderate to high risk of a heart attack. An echocardiogram in April found that the main heart pumping chamber had thickened, his ability to exercise had decreased slightly, and his blood pressure had increased a bit. Dr.

Newman and his cardiologist, Dr. George Bren, changed his blood pressure medicines, and the pressure lowered to 120/80, Dr. Newman said.

Another blood test, for a substance called apoB, might have been a better measure of risk than LDL, some doctors say. Others disagree.

Some doctors say people like Mr. Russert, with no symptoms but risk factors like a thickened heart, should have angiograms, in which a catheter is threaded into the coronary arteries, dye is injected, and X-rays are taken to look for blockages. Some advocate less invasive CT angiograms. Both types of angiogram can identify plaque deposits, and if extensive disease or blockages at critical points are found, a bypass is usually recommended. But the tests still cannot tell if plaques are likely to rupture, Dr. Smith and other cardiologists say. And Mr. Russert's doctors did not think that an angiogram was needed.

An autopsy found, in addition to the plaque rupture, extensive disease in Mr. Russert's coronary arteries, enough to surprise his doctors, they said. Had they found it before, Dr Newman said, a bypass would have been recommended. Dr. Bren differed, saying many cardiologists would still not have advised surgery.

Given all the uncertainties, what's a patient to do?

"You want to be sure your blood pressure and lipids are controlled, that you're not smoking, and you have the right waist circumference," Dr. Smith said.

Statins can reduce the risk of dying from a heart attack by 30 percent, he said.

"But what about the other 70 percent?" Dr. Smith asked. "There are other things we need to understand. There's tremendous promise, but miles to go before we sleep."