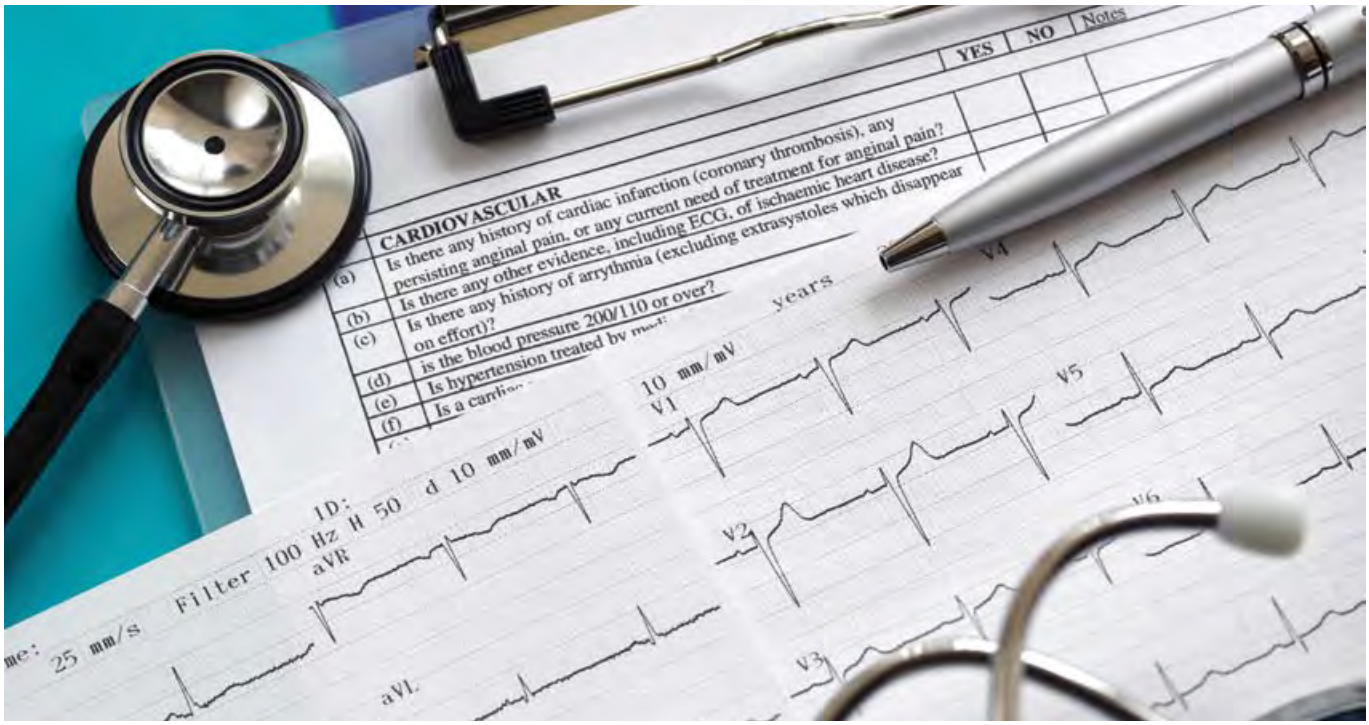


Dr. Stanley Chia is a highly skilled interventional cardiologist in Singapore who performs more than 600 invasive coronary angiography and percutaneous coronary intervention procedures each year. He is experienced in managing complex cardiovascular disease and difficult coronary interventional procedures, such as left main disease, chronic total occlusions and calcified lesions. He's also specialized in performing coronary angiography and intervention using both the radial artery and femoral approach.

At the heart of the matter:

How to treat blockages in the coronary arteries

Current treatment options for patients with coronary artery disease

Cardiovascular disease is a leading cause of death worldwide. The Singapore Heart Foundation reported that 29.5 percent of deaths in 2013 were caused by heart disease – a broad term that includes heart conditions like coronary artery disease, stroke, and ischemic heart attacks.

For patients diagnosed with coronary artery disease, restoring blood flow in the coronary arteries that supply the heart is the main goal of treatment. Dr. Stanley Chia, consultant cardiologist at Mount Elizabeth Hospital in Singapore explains the different treatment options available for patients with this condition.

What is Coronary Artery Disease?

Coronary Artery Disease is a form of heart disease where inflammatory cells, lipid-rich substances and calcified material are deposited as plaques in the arteries that supply blood to the heart muscle, explains Dr. Chia. "These plaques cause the coronary arteries to harden, and over time, the plaques may grow in size and narrow the lumen within the arteries."

The progressive build up of plaque in the coronary arteries eventually clogs up the arteries, causing abnormal tone and function in those blood vessels and a reduction in the supply of oxygen and nutrient-rich blood to the heart. "When the heart is starved of oxygen, it fails to work properly and can result in symptoms such as chest pain and shortness of breath," Dr. Chia says.

What are the risk factors for coronary artery disease?

Risk factors for coronary artery disease fall under two categories - modifiable or non-modifiable. Modifiable risk factors can be treated and controlled and include lifestyle behaviours like cigarette smoking, hypertension, high blood cholesterol, uncontrolled diabetes, physical inactivity and being overweight, Dr. Chia says. Non-modifiable risk factors cannot be changed and include male gender, advanced age and race.

"There is a hereditary link with coronary artery disease. Individuals with a family history of heart disease, such as a parent with heart disease before age 50, are at higher risk of heart disease as well," Dr. Chia says.

What are the treatment options for patients with heart blockages?

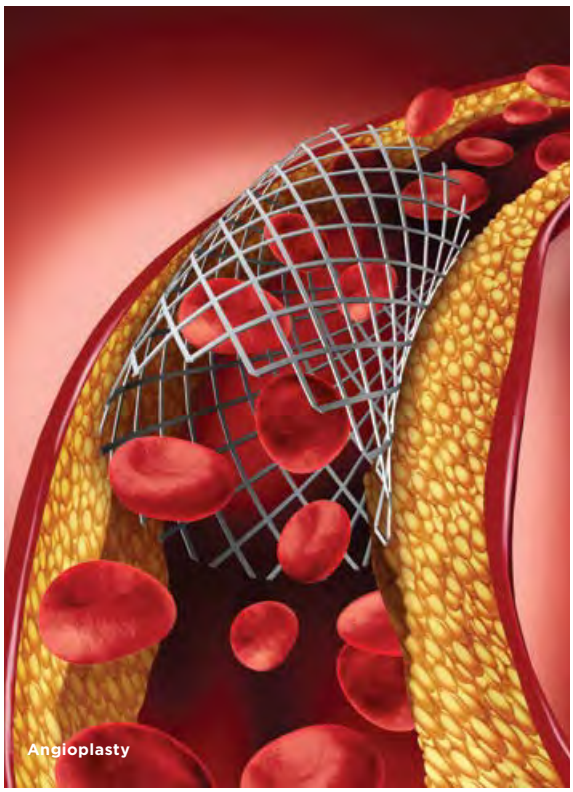
Treating coronary artery disease often requires a three-pronged approach of lifestyle modification, medication and surgery to relieve the symptoms of heart disease and reduce the risk of heart attack, heart failure or even sudden death, advises Dr. Chia.

Patients are generally advised to eat a healthy diet that is rich in fruits, vegetables, whole grains, and low in animal fat, cholesterol and salt and to maintain a healthy body weight through routine physical activity, Dr. Chia says. “Quitting smoking will cut the risk of heart attack while managing stress and having adequate rest can improve general emotional and physical health,” he adds.

In addition to lifestyle change, medication is often also needed to treat coronary artery disease. There are two types of medications that can be prescribed for patients, Dr. Chia says. The first class of medicines reduce the risk of heart attack and slows down progression of coronary plaques — these include blood thinners like aspirin and clopidogrel and blood pressure lowering medication like statins, angiotensin converting enzyme inhibitors and angiotensin receptor blockers.

The second class of medicines reduce the workload of the heart and relieve symptoms — these include nitroglycerine, nitrates, beta-blockers and calcium channel blockers. “Taking medication may prevent the need for more invasive treatment or procedures,” Dr. Chia says.

Healthy diet



Angioplasty

Surgical treatment of coronary artery disease

In some cases, patients with coronary artery disease can be treated with a non-surgical procedure called a percutaneous coronary intervention (PCI) – or as it is more commonly known, an angioplasty. This procedure restores blood flow through the artery to improve the symptoms of heart disease.

A long slender tube is inserted into an artery in the wrist or groin area under a local anaesthetic and threaded to the affected coronary artery, Dr. Chia explains. “A balloon is delivered to the blocked artery and inflated to compress the plaque. A stent is often implanted in the artery as well and it may release a medication to help keep the artery open,” he adds.

Meanwhile, patients with more extensive disease that involves multiple coronary arteries may need a more invasive surgery called coronary artery bypass grafting (CABG). “This is an open-heart surgery where a surgeon uses blood vessels from another part of the body, like the leg or arm, to create grafts to bypass the narrowed coronary arteries,” Dr. Chia says. “This allows blood to flow around the blocked coronary artery and can improve blood flow to the heart muscle and potentially prevent a heart attack.”