

COVID-19 and Myocarditis...



Dr Marhisham Che Mood

The issue of myocarditis as a possible side effect of the COVID-19 vaccination among teenagers has seen parents fretting over whether to vaccinate their kids or not. So, what are the risks of this, and how should we approach it?

Paediatric Cardiologist **Dr Marhisham Che Mood** says this:

In a nutshell, my advice is to vaccinate. This is because the risk of myocarditis from a COVID-19 infection is significantly greater than the risk of myocarditis post-vaccination.

Firstly, let's look at what this big word - Myocarditis - means. Simply put, it is a condition where the heart muscle becomes inflamed, and as a result, heart function deteriorates, and the patient feels very poorly. If not managed well, yes, it can cause death.

In children, this condition is generally caused by infections, often viral, such as the Parvovirus and Coxsackie virus, which causes HFM disease; less commonly, it can result from chemical or medical reactions and certain systemic diseases that cause inflammation. Meanwhile, it may also be due to functional problems in adults, with patients often having previous histories of systemic problems or ischemic heart disease.

Symptoms would vary with age.

Infants present very early with shortness of breath, sweating, rapid heart rates. Early viral myocarditis in neonates can sometimes start in-utero. This is difficult to treat, and mortality can be as high as 50%; the younger the infant, the poorer the prognosis, especially those under a month old. Scans can sometimes pick up myocarditis in-utero if we notice hydrops fetalis.

The problem is that some symptoms can be vague and subtle, and the condition can be challenging to diagnose in babies who cannot communicate. Red flags to notice are extra fussiness and irritability in these babies. Thankfully we have rarely seen this at IJN, perhaps 1 - 2 cases in 10,000.

In older children, their activity level will drop. They will complain of tiredness and sweating, and some even present with chest pain and palpitations.

Treatment is basically to support the heart and treat complications. To strengthen heart function and maintain adequate blood circulation, we prescribe heart failure medication while diuretics help clear the extra fluid in the body, either in the lungs or elsewhere. Most kids recover completely with timely diagnosis and proper medication. However, up to one-third of patients can eventually develop chronic heart diseases, with some 10-20% of these progressing to dilated cardiomyopathy.

So basically, viral myocarditis results from the immune system kicking into overdrive in reaction to an infection. This is effectively what happens when there is a reaction to the COVID-19 vaccination, if any.

The good news is that the CDC study shows that such reactions are infrequent, with only around 12 cases or so per million, and that too, more often in boys than girls, although we have not yet figured out why. Also, this is only observed in those who received the mRNA vaccines.

The immune system detects the mRNA as the "bad guy" and sends the cavalry in, causing an inflammatory reaction. So, it is an immunologic response post-vaccine.

We administered more than 27,000 doses of the vaccine, and we have not seen any serious case of myocarditis, even among the children.

Although, as I mentioned, it is rare, we remain vigilant of symptoms such as breathlessness, chest pain, sinus tachycardia and fatigue post-vaccine. Just as a reference point for parents who take the pulse rates of their children, neonates have heart rates of between 100 - 160bpm, toddlers around 120 and by school age, it drops to 90 - 100bpm. Teenagers' heart rates usually hover around 70-90bpm, just like adults.

Some children may also complain of abdominal pain and vague symptoms such as low-grade fever, vomiting, nausea, and syncope, post-vaccine. However, these can be symptoms of many other causes. The median response time is 2-3 days after the second dose, although it can extend up to two weeks.

Again I stress, the prevalence of post-vaccine myocarditis is very rare. One - children included - is many times more likely to develop myocarditis with a COVID-19 infection than from the vaccine. And if you don't vaccinate, the chances of contracting the virus, and the chances of serious complications, increases too. On top of that is the risk of Long COVID, so make a wise decision.

Understand that there is more than sufficient data to support the efficiency and safety of the vaccination for our children aged over 12 years. Prevention is better than cure. It is now a fundamental principle of modern health; preventing ill health and improving public's health.

