

# MIS-C and COVID-19: What should we do?

DR TAHERA NAZRIN

Multisystem Inflammatory Syndrome in Children (MIS-C) is the disease of children from birth to 21 years which is an emerging health crisis of children in Bangladesh. In late April 2020, MIS-C was first reported in the United Kingdom which was described as serious COVID-19 cardiovascular presentation in the form of the paediatric multisystem inflammatory syndrome, which included features similar to Kawasaki disease (KD). MIS-C caused by the COVID-19 virus has more rapid clinical deterioration than KD.

The grave situation of MIS-C is a sudden deterioration of cardiac function like inflammation of heart muscle (myocarditis), coronary artery dilation with irregular vascular wall, valve leakage, hypotension, cardiac failure with cardiogenic shock. The child presents with increased heart rate and respiratory rate, unconsciousness, irritability and low oxygen level in body.

Along with the clinical features, blood tests and chest X-rays will help to diagnose the MIS-C even. The child suspected as MIS-C/KD can be referred to a paediatric cardiologist for echocardiography for



further cardiac evaluation and management. The matter of concern of this disease is cardiac deterioration, increased thickness of blood flow which can block the inflamed blood vessels especially the heart vessels.

The child may need ICU support for multidisciplinary management. As they may have gastrointestinal dysfunction, lung and kidney failure along with inflammation of the heart, or sudden shock. Low white blood cell count and initially low followed by high platelet count

can help to diagnose the disease.

Most important thing is to diagnose MIS-C in time. Diagnosis within 7-8 days of illness can prevent deterioration of the patient, especially coronary artery changes. When the coronavirus enters the body, it starts a rapid storm of inflammation against which body defence or protective system becomes active. This hyper-inflammatory stage should be stopped immediately.

Cardiac vessels can be changed (abnormally dilated or narrowing

with irregular vascular wall) during or after the disease, even after completion of treatment. Therefore, frequent follow-up is part and parcel of the management of this disease.

Timely diagnosis and treatment within the acute phase of the disease process of MIS-C patients can prevent the unfavourable outcome of coronary artery aneurysm. Awareness among the general population regarding this Kawasaki disease like treatable syndrome in children and

long-term surveillance of these patients is necessary for future guidelines of MIS-C patients. Prevention of coronavirus infection in children by social distancing, wearing of mask and use of hand sanitiser should be strictly followed.

After getting discharged the child may have irritability, myalgia, and recurrence of fever, sore throat or further attack with coronavirus infection. Besides the traditional medications and vitamin supplementations, zinc and nutritious food are prescribed. Overall mental well-being also needed to be nurtured properly by indoor games, giving special attention to them with full family support.

It is time to realise that COVID-19 is not only affecting adults but also affecting our children gravely. MIS-C and COVID-19 in children are preventable and treatable diseases. Everybody should keep in mind that follow-up with concerned physicians is very important during post disease period to prevent further disease complications.

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## #VaccinesWork



### Vaccines bring us closer

With all eyes on vaccines, World Immunisation Week 2021 offers an unprecedented opportunity to build public trust in the value of all vaccines and help build long-term support for immunisation. World Immunisation Week 2021 will aim to:

- Reframe the global vaccine conversation to focus on the importance of vaccines
- Highlight the many ways in which vaccines enable us to live healthy, productive lives by preventing the spread of vaccine-preventable diseases
- Demonstrate social proof that the broader public already values and trusts vaccines

This year's campaign looks to build solidarity and trust in vaccination as a public good that saves lives and protects health. The campaign will go on from 24<sup>th</sup>-30<sup>th</sup> April this year with the theme, "Vaccines bring us closer".

For over 200 years, vaccines have protected us against diseases that threaten lives and prohibit our development. With their help, we can progress without the burden of diseases like smallpox and polio, which cost humanity hundreds of millions of lives.

Whilst vaccines are not a silver bullet, they will again help us progress on a path to a world where we can be together again. Vaccines themselves continue to advance, bringing us closer to a world free from the likes of tuberculosis and cervical cancer, and ending suffering from childhood diseases like tetanus and measles.

Investment and new research is enabling groundbreaking approaches to vaccine development, which are changing the science of immunisation forever, bringing us closer still to a healthier future.

## HEALTH bulletin



### Significant increase in life expectancy for adults living with HIV on ART

Life expectancy among adults living with HIV receiving antiretroviral therapy (ART) in Latin America and the Caribbean has increased significantly since HIV testing and treatment services became more widely available, according to research published recently in *The Lancet HIV* journal.

The largest study of its kind indicates that life expectancy for people in the region living with HIV who receive ART is now close to that for the general population, mirroring trends seen in higher-income countries.

In 2016, the World Health Organisation (WHO) launched the 'Treat All' policy recommendations to help achieve the global target of ending AIDS by 2030 by treating all people living with HIV using antiretroviral drugs. By the end of 2020, 96% of low- and middle-income countries (LMICs) were on course to adopt Treat All, compared with 40% in 2016.

ART was introduced to Latin America in the 1990s and became more available during the 2000s. However, little data exists on the life expectancy of people living with HIV in LMICs. Until now, no large-scale investigations had taken place, with studies limited to single-country analyses in South Africa and Brazil. Large studies in Europe, Canada, and the USA have previously shown that ART has greatly increased life expectancy among people living with HIV.

## What to do in case of antibody resistance in COVID-19?

DR MUHAMMAD TOREQUL ISLAM

Generally, the humoral immune system relies strongly on the production of specific antibodies for a successful immune response against a certain pathogen. An efficient immune response depends on certain factors, including the health and type of the pathogen, pathogenicity of the infection, and so on. New research indicates that three new, fast-spreading SARS-CoV-2 variants can evade antibodies that work against the original form of the virus that sparked the pandemic.

In general, a host can evolve two types of defense mechanisms to increase its fitness against a pathogen, resistance and tolerance. Resistance to external pathogens by the host immune system has been strongly debated by life scientists for many years. In humans, an alteration of toll-like receptor signalling is responsible for Plasmodium infection tolerance.

To date, we have seen that the SARS-CoV-2 virus is causing prominent harm to a certain group of people, such as those having diabetes, heart and lung diseases, and so on. However, the true groups that are resistant and/or tolerant to this detrimental virus are yet to be found out.

It is evident that SARS-CoV-2 is always mutating. During winter, several fast-spreading variants of this virus were detected in the United Kingdom, South Africa, Brazil and elsewhere. It has been detected that these new variants carry multiple mutations in their spike genes. Now, there is a growing concern on the effectiveness of spike-targeted drugs, vaccines and antibody therapies used to prevent or treat this viral infection.

One study reports that the antibodies from the blood of SARS-CoV-2 recovered people vaccinated with the Pfizer vaccine neutralised the UK variant with a similar level, while the other two variants required from 3.5 to 10 times greater antibody levels for the neutralisation.

Although antibodies are not the only measure of host protection, the other elements of the immune system should be able to compensate for increased resistance to antibodies to fight against this dangerous virus. We may need to continually screen effective antibody levels as the SARS-CoV-2 variants arise and spreading to follow the success of the vaccines and antibody-treatment strategies.

The pandemic will calm thousands of lives before we find a true fighter (e.g., vaccine or drug). However, we should take

additional measures along with the previously reported conventional measures (such as using hand sanitisers or handwashing, maintaining social distance, quarantine, etc.).

Whenever you come from outside, leave the clothes in a secluded area of the house or wash with detergent immediately and avoid close contact with others in your family. Eat fruits and vegetables as much as possible as they will increase the body's immunity. Avoid self-prescribing behaviour and take proper advice from the physician if you find any symptoms of COVID-19. We must fight off the pandemic with our sincere efforts collectively.

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### Rotavirus vaccines made available for use in humanitarian crises

Médecins Sans Frontières (MSF), Save the Children, UNICEF and the World Health Organisation (WHO) welcome the opportunity to make rotavirus vaccine available to more children living in humanitarian crises thanks to a landmark pricing agreement with the manufacturer, GlaxoSmithKline plc (GSK).

Children living in refugee camps, displaced communities or in other emergency situations now have a better chance of being protected against severe diarrhoeal disease with these lower price rotavirus vaccines. Diarrhoea is one of the leading causes of death among children under five.

The agreement makes use of the multi-partner Humanitarian Mechanism, launched in 2017. Rotavirus vaccine is the second vaccine to be accessed through the scheme, which depends on manufacturers making their vaccines available at their lowest price for use in emergencies - across countries of all income levels. The first to be made available was the pneumococcal vaccine.

Rotavirus is the most common cause of severe diarrhoeal disease in children under 5 years globally, responsible for up to 200,000 child deaths each year. Children in refugee camps and displaced communities are among the most vulnerable in the world to such diseases, due to population density, poor hygiene and sanitation, and higher rates of malnutrition. Vaccination is therefore especially critical for these children, who may otherwise lack access to essential health services.

Source: World Health Organisation (WHO)



- 1 Our body enters into a fasting state approximately eight hours after our last meal, when our gut completes the absorption of nutrients from our food.
- 2 For energy, the first thing our body will use up is the glucose stored in our liver and muscles.
- 3 When the glucose runs out, our body starts using up fat for energy. Small quantities of glucose are also manufactured through other mechanisms in the liver.
- 4 Only during a prolonged fast of many days or weeks, our body eventually turns to using up protein released from the breakdown of muscle. However this does not happen while fasting in Ramadan if we eat properly when we break our fast.

- 5 The use of fat for energy aids weight loss and reduces our cholesterol levels in the long run. Weight loss results in better control of diabetes and reduces blood pressure.
- 6 Extending only from dawn till dusk, the Ramadan fast gives us ample time to replenish our energy stores during iftar and sehri meals. This provides our body with a progressive and gentle transition from using up glucose stores to using up fat as a source of energy. It prevents the breakdown of muscle for protein.
- 7 During the fasting month, a detoxification process also occurs, as toxins stored in our body's fat are dissolved and removed.
- 8 After a few days of the fast, higher levels of certain hormones appear in the blood (endorphins), resulting in a better level of alertness and an overall feeling of general mental wellbeing.

## How Ramadan Fasting Benefits Us

### Stay Healthy in Ramadan

Safe fasting

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