Diabetes linked to Covid-19

MANY recent reports have observed increased diagnosis of diabetes mellitus (DM) after Covid-19 infection.

People who survived showed a 40% increased risk of being diagnosed with DM at one month after being infected with Covid-19. This translated to about 13 to 14 more new cases per 1,000 people at 12 months after Covid-19. These numbers were net increments after adjusting for and comparing with new DM diagnoses in contemporary and historical controls respectively. The numbers hold up even after adjusting for possible risk factors such as age, sex, race, weight, steroid use, and area deprivation scores.

Another recent study of 372,816 Covid-19 patients reported 3,139 new DM cases. Seventy-one percent were at higher risk at one month after Covid-19 infection, and the risk was maintained at 17% between month two and three weeks, and 20% between months four and 12. This gives an average of about 36% higher risk over the 12 months following infection, and translates to about 22 new diabetes cases per 100,000 patient-week in the first month after Covid-19, and 18 per 100,000 patient-week during months two to 12. Overall, this gives an average of about 19 new DM cases per 100,000 patient-week.

In this study, the median age of the patients at diagnosis of DM was 45 (between 33 and 55) years.

A similar observation was noted in adolescents and children in the United States where youths (81,000 aged below 18 years) had double the risk of developing DM.

With 4,104,212 survivors of Covid-19 in Malaysia as of April 7 (covidnow.moh.gov.my), and estimating new DM cases at 19 cases per 100,000 patient-week, we might expect to see about 40,550 new DM diagnoses accumulating over and in the next 12 months, or about 780 new cases every week in Malaysia. This may be further broken down to an average of 3,119 new cases in every state and Federal Territory.

These 40,550 new cases are in addition to the annual background incidence of DM that is estimated to be about 5% of the population for both pre-diabetes and DM, which is about 3.5 million each currently and projected to double by 2025.

Some of these cases are likely to come from those who were already at risk of DM and conversion was brought about earlier by Covid-19, which itself may cause the new cases. Some cases could develop through direct pancreatic damage from SARS-CoV-2, others by the occurrence of the multi-systemic inflammatory syndrome associated with post-Covid-19 immunological and inflammatory disease in children.

Stress hyperglycaemia and steroid-induced hyperglycaemia are other possible mechanisms following more severe symptoms of Covid-19.

Furthermore, cardiometabolic risks and metabolic outcomes may have been compromised during the lockdown period and in post Covid-19 conditions as a result of profound changes in diet, exercise habits and other health-related behaviours.

This data rings alarm bells for both Covid-19 survivors and healthcare providers. For the former, it is important to pay attention to a healthy lifestyle in diet and physical activities to achieve optimal body weight. These include adopting a reduced carbohydrate, good quality protein and healthy fat diet, getting quality sleep, and maintaining good mental health.

Screening must be increased for DM. At the public health level, it calls for the uptake of vaccination among children and adolescents.

Certainly, Malaysia will need to analyse its own high-quality data among individuals recovering from Covid-19. This will enable policy-making on effective preventive and curative measures. The number 40,550 is just a close estimate for Malaysia, but the counting is ongoing.

Until Covid-19 survivors are alerted and apply preventive measures of healthier lifestyle, there will be a wave of new DM hitting our healthcare system with its long-term complications on top of the Covid-19 pandemic and its long-term conditions.

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