Health Talk 2: Immune System Boost

Xiao Ying: Hello, everyone! Welcome back to the 2nd episode of MMI Podcast: Medicine &Wellness ! My name is Xiao Ying and I'll be hosting the episode today. For today's episode, we will be discussing with Dr. Amir to gain deeper insights on the immune system and the ways on enhancing it.Today, we are honoured to have Dr Amir Latiff with us today, who is a paediatrician at Pantai Hospital Kuala Lumpur. He sub-specialises in allergy and immunology. Without further ado, let us welcome Dr Amir. Welcome Dr, how are you?

Dr.Amir : I am fine thank you.

Xiao Ying : So Dr, could you first introduce yourself to the audience?

Dr. Amir: Hello everyone. I am Dr Amir Hamzah, a Consultant in Clinical Immunology, Allergy & Paediatrics. I have been in private practice since 2011 at Pantai Hospital Kuala Lumpur, where in 2017 I established for the hospital the first Allergy & Immunology Centre in the private healthcare sector in Malaysia. After coming back to Malaysia in 2006, I was in the academics at Monash University Malaysia and Universiti Putra Malaysia.

Xiao Ying: Thank you for making time to enlighten us today. It's really great to have you here today! Let us jump into the questions, shall we?

Dr. Amir: Let's get to the questions then.

Xiao Ying: Great, Dr! To start off, could you **briefly introduce us to the immune system before we delve further into it?How is it important to us?**

Dr. Amir: The immune system is our defence system and naturally that is a very important system to us as we need to fight off infectious diseases and cancer. The immune system is usually divided into the innate system and the adaptive system. The innate system are generally non-specific and could be considered the first line of defence (or sometimes the 2nd line of defence after the natural barriers e.g. skin, saliva) and constitutes for e.g. the neutrophils, whilst the adaptive system are more specific e.g. antibodies (or the immunoglobulins) that are specific to fight specific micro-organisms e.g. bacteria, virus. These 2 systems will interact with each other in an intricate network of messaging through cytokines, chemokines which are essentially chemical messengers and there are hundreds of them to emphasise the complexity of the immune system.

Xiao Ying: I see.. People often talk about wanting to "boost their immune system". What do you think they mean by that? **And what are the things that will boost one's immune system?**

Dr. Amir: I would think this phrase (which we know is widely quoted by the general public) as means and ways to enhance or strengthen the immune system. And they would mean this usually by something that we can consume/eat in general in the form of supplements. If we look at this notion of boosting your immune system, then we need to understand how our body interact or 'talk' to the immune system and how the immune system would depend on

several factors to maintain its wellness. This would include in simple terms the lifestyle we lead - from what we eat, if we have enough exercise (and hence exposure to sunlight), do we sleep enough and to even our emotions and mental health. So all these if done adequately and more, would boost your immune system. A healthy balanced diet would help to boost your immune system, and if we look at the flip side e.g. avoiding foods full of preservatives & colourings, would also boost your immune system. Doing exercises, sleeping enough for 6-8 hours and having a healthy relationship with family and friends, and colleagues at work, and thus minimising your stress level, will boost your immune system. So, back to the supplements, for as long we eat food appropriate for our age and nutritional requirement, than really supplements may not be necessary. But that's easier said than done given our state of the world in general as we know it in the previous decade or two.

Xiao Ying: I see. I think generally, we know that our immune system is pretty important to us all. **How is it affected in immunocompromised individuals?What are the examples of disorders that will make a person immunocompromised?**

Dr. Amir: The immunocompromised individual would mean that a person has a defect in the immune system, that is either primary immunodeficiency (which we like to refer as inborn error of immunity as well) or secondary immunodeficiency e.g. HIV infection, immunosuppressive drugs. There are at least 430 different conditions that make up primary immunodeficiencies (or PID), and many of these, the genetic defects have been identified. So, in PID we can obviously see the major effect being immunocompromised by the lack in the body's ability to fight off infections, and certain cancers. Hence, patients would present with serious, persistent, unusual and recurrent infections (i.e. SPUR – short for serious, persistent, unusual, recurrent). Cancers more likely to occur are the lymphoproliferative disorders e.g. lymphoma, and gastric cancers. Another manifestation is autoimmunity or autoinflammatory conditions e.g. systemic lupus erythematosus (SLE).

Xiao Ying : Alright.. But Dr, **does antibiotic or antiviral medication cause immunosuppression?**

Dr.Amir: Whilst antibiotics and antivirals are important in the treatment of bacterial and viral infections, respectively, and that we think there would not be immunosuppression or these drugs affecting the immune system, we do not understand that fully. Certainly laboratory studies would show these treatments can affect the immune system back 2 or 3 decades ago, but only recently are we looking into these more closely. We generally assume that antibiotics will significantly impact the bacterial cells, but they seem to trigger responses in the immune system, which can then reduce the functional benefit of the immune cells. In one study, researchers found mice infected with *E. coli* and treated with ciprofloxacin caused macrophages to be less effective at fighting off infection, as the antibiotics affected their respiratory burst. So we need more studies to understand how each antibiotic or antiviral affect our immune system.

Xiao Ying: I see, that's true, we really need more studies on this. In relation to the current COVID-19 pandemic, **how does COVID-19 affect immunocompromised individuals?**

Dr. Amir: We are still learning about COVID-19 and what it really does to the immune system, and what more to the immunocompromised individuals. Case series or reports are

still coming through to understand this circumstance better for the immunocompromised patients. While there is no data yet to suggest PID patients at a higher risk, it is believed that they are. My society, the Malaysian Society of Allergy and Immunology (MSAI) and the Malaysian Patient Organisation for Primary Immunodeficiencies (MyPOPI) released a Joint statement on the current COVID-19 pandemic for management of PID patients. Please check out the statement on our website and/or Facebook.

Xiao Ying: Ah I see, that sounds really good! We will check that out. In addition to that, there has been this saying that has been going around where people have been selling many types of food, saying that it can boost the immune system and prevent one from contracting the COVID-19 virus. Generally, **what kind of food will boost the immune system?** And what would you advise in regards to these types of food being sold online in the name of combating COVID-19?

Dr. Amir: I think this is a tricky question to answer as the information may not all be evidence-based and hence we would not really have strong opinion recommendation, as evidence would be low or not found for various individual food. And I say this in general, and even more so for the COVID-19 as there is no hard evidence to show any food will boost the immune system. Thus I will be very cautious to buy any foods claimed to combat the COVID-19 virus.

Xiao Ying: Alright Dr. Vitamins, especially vitamin C, have been famous in "boosting our immune system". **How does vitamin C help to boost the immune system?** Also, besides vitamin C, **are there any other vitamins or nutrients that will boost our immune system?**

Dr. Amir: Whilst many studies have been conducted to assess the mechanism and impact of vitamin C to various immune cells, but these might not necessarily translate to a state of immunity all the time. We have various immune cells working with specific individual function, and collectively lead to a state of immunity. Hence, vitamin C alone would not be adequate for immunity but needs other vitamins or nutrients, e.g. vitamin D, zinc. In addition, if we had an infection, or other diseases leading to inflammation, that state of inflammation may then affect the immune cells leading to lowered immunity. Hence, as mentioned earlier, if we did not have a balanced diet that included enough vitamins, mineral and trace elements, then there can be a lower capacity to fight infections. Hence, having adequate micronutrients would help boost the immune system in the first place.

Xiao Ying: Got it, doctor! So that means, by having food that has enough macro- and micro-nutrients, we do not need to take any supplements anymore. Moving on from food, I'd like to ask a little bit about sleep and the immune system. During this MCO, usually most of us our sleeping routine will get messed up. **Can you briefly explain the relationship between low immunity and irregular sleep patterns?**

Dr. Amir: OK. I had already touched upon this at the earlier part of our conversation, and that we need enough hours of sleep. Over the last 2 decades or so, neuroimmunology research has accumulated strong evidence that sleep enhances the immune defence, hence the old adage "sleep helps healing". This communication is bidirectional and thus sleep

affects the immune system, and vice versa. This is a very huge question to answer, but essentially it has been found that during early nocturnal sleep there is production of pro-inflammatory cytokines, whereas during daytime wakefulness there is anti-inflammatory cytokine activity peak. Hence irregular sleep patterns will disrupt this process, and thus a lowered immunity, and vice versa; in fact a vicious cycle in that lack of sleep lowers the immune system which then affects the sleep cycle, and so. Hence, we must keep to our regular sleep pattern during this MCO.

Xiao Ying: Well said, Dr! Here is a gentle reminder to our audience, in order to protect our immune system, remember to sleep early! Besides that, we often heard that people who are constantly under stress have a higher chance to fall sick due to their low immunity. **So, does mental health have an impact on our immunity as well?**

Dr. Amir: Certainly, despite some scepticism that immunology and psychology being at opposite polars, there are studies in the last decades studying this relationship between our emotions and immune responses. Based on a large body of both clinical and experimental evidence, there is an increased incidence of emotional disorders in patients suffering from immune diseases, and conversely, an increased susceptibility to immune diseases in patients suffering from mental disorders. And it is also noted both immunological and emotional responses are dynamic (or plastic) and continuously changing in life. So yes, there is an impact of mental health on our immunity.

Xiao Ying: Thanks for the clarification! I guess I'll have to regularly destress to be healthy then. I also read that a healthy lifestyle helps one's immune system to be in the best shape. **Would you mind sharing with us in detail what type of exercises can help us to boost our immune system?**

Dr. Amir: Yes, and once again I mention it from our earlier part of this conversation. Of course, consideration of what type of exercises would depend on your physical fitness, say for e.g. you are a professional athlete. As they do much more exercises/training, they are probably in good shape in terms of their immune system. Their concern would actually be over-training which can then impair their immunity. And remember it is not the exercise alone, but its relationship with sleep and nutrition, plus your emotions and mental health will all intercalate towards improving our immune system. There are 4 types of exercises – aerobic (endurance or cardio) (e.g. brisk walking, jogging, cycling, swimming); strength (anaerobic – muscle and bone strengthening (e.g. lifting weights); balance – to maintain body balance and prevent falls (e.g. tai chi), flexibility – stretching muscles and making body limber, and easier to exercise (e.g. yoga, pilates). All these types of exercises will improve the immune system.

Xiao Ying: **Since we need to comply with MCO by staying at home, what kind of exercises would you suggest to our audience, Dr?**

Dr. Amir: There are no specific exercises I would have thought and namely should be one that one is able to perform easily. Don't stress yourselves doing these exercises and usually can just be the simple aerobic exercises (as I mentioned) 10-30 minutes, 3-5 days a week, or at whatever level your physical and mental capacity dictates. Or you may even have a

mini-gym in your home, or you have been doing yoga, just carry on with these. I personally have been jogging indoors during this MCO, instead of outdoors, and try to maintain a 5km run 3 days a week. Just enjoy your exercises!

Xiao Ying: Thanks for sharing Dr! I believe most of us tend to have some bad lifestyle habits that affect our immune system in a bad way. **What are some of these habits that one should quit?**

Dr. Amir: Well, I think many can guess this and that would include smoking (including vaping) and excessive alcohol. In addition, quit being indoors in general all the time, and attempt to have activities outdoors (but not now during the pandemic, and we may have to deal with the 'new normal' once the MCO is lifted). Quit all those junk foods and eat healthy home-cooked fresh food whenever we can.

Xiao Ying: I've really learned a lot from this conversation about our immune system and how to care for it. Before we end the episode, what would be your takeaway message for our audience?

Dr. Amir: Well, it would simply be have a good and balance lifestyle to the best of our capability and capacity. It may already be in you and you just maintain that, and if it is not in you yet, do not fret and we can start immediately. We live for today.

Xiao Ying: Thank you for your valuable insight and advice, Dr Amir! It has been wonderful having you on the podcast.

Dr. Amir: It has been pleasure and I pray everyone stays safe and healthy.

Xiao Ying: We would also like to thank our audience for tuning in. Like and share this podcast with your friends if you found it useful and don't forget to follow and rate our podcast on Spotify and iTunes. If you have any feedback for us, you can message us through MMI Malaysia's Facebook page. Stay tuned for our next episode of MMI Podcast: Medicine & Wellness! Take care and stay safe! Till then!