Blog 18.04.21

Somehow there's always new important things to discuss about COVID-19. It is a very fast evolving body of knowledge and so hard to keep up with. It's now all about those clots that seem to be related to some vaccines, the vaccines we are NOT using in our country.

Israel which has already vaccinated 5.3M of its 9.3M citizens using the same Pfizer/BioNTech vaccine we are using, which they got very early and cheaper in exchange for meticulous recording of extensive post vaccination data. This has not shown an excess of problems with unusual clots like those countries who are using the AstraZeneca or Johnson and Johnson vaccines.

So this brings me to what? and why?

Clots:
There will always be more clots in sick people. Lying in bed too long just like sleeping on a
Long-haul cramped airline seats can reduce the calf pumping. This is needed to push blood up out of the legs back to heart and cause clots to form in the deep veins. As these clots are broken up by the immune system pieces can come loose, flow up to heart and block it off causing a massive heart attack.

Much more often the pieces are small enough to flow into the right side of the heart and be pumped out into the lungs where they get trapped in the much smaller arteries feeding the lungs to pick up oxygen. The blocked lung segment then collapses and can cause chest pain directly outside the affected segment, worse on deep breathing. This is a chemical pleurisy, and a medical emergency as it is a warning bigger clots might come off if we don't thin the blood fast and reduce more clots forming.

However the early infections with COVID-19 produced a clot picture like we had never seen before,
thousands of tiny clots which plugged the lungs stopping oxygen transfer.

When we didn't know better, like we always used to do for low oxygen states, ICU and Emergency Medical specialists put those very sick people on respirators which drive air down into the lungs only to see most of these patients die anyway. Doctors quickly learned to use what is caused positive oxygen pressure instead - those nasal prongs for extra oxygen many of you will have seen or even had in hospital and made right here in South Auckland by Fisher and Paykel.

Along with this we learned that these clots were caused differently and we had to treat them differently. Similarly with COVID-19 we saw occasional patients who had clots in unexpected places, like up in the central sinuses of the brain or in the liver. These nearly all were young or slim female middle-aged, people, a group known to have more robust immune systems. Also they had really low levels of platelets, the little blood cell fragments that cause clotting, not high levels. Treating their low levels of platelets with platelet transfusions to prevent catastrophic bleeds only made them clot more! Something was eating up the platelets but causing more clots! And suddenly we saw the same pattern we see in those very rare patients who mount an allergic reaction to heparin (clexane), the injection we use to prevent clots.

It’s called Heparin resistant Thrombosis Treatment syndrome, HrTT.

COVID-19 sets off HrTT occasionally in people with very effective immune systems. And some vaccines in an effort to signal to our immune system that incoming COVID-19 viruses are nasty, seem to be provoking (very rarely in much less numbers than COVID-19 itself) the same response.

Firstly, it seems to be just the viral vector vaccines like Astra Zeneca and Johnson and Johnson, neither of which we are using. Secondly it is rare, estimated currently at 4 cases in a million.
Thirdly, the COVID-19 virus does this too in far greater numbers than the vaccines. We are seeing as now around the world COVID-19 causing more infections in young people, especially in Brazil, and more serious illnesses especially as variants develop.

Remember, all viruses have the environmental pressure to survive, and its survival means killing off less victims but being more infectious. Being more infectious then catches those younger people whose robust immune systems protected them initially in the first and even second waves of infections, but especially with more infectious viruses - makes them vulnerable to the rare HrTT.

Dexamethasone, the strong steroid which is low dose is now mainstream treatment to calm down the immune system in COVID-19 infections and works well, but HrTT can happen in young people and cause clots before they are sick enough to seek treatment and cause major medical problems like severe strokes, or dead areas in major organs reducing their ability to work.

But I want to stress, it is very, very rare with vaccinations and the Israeli data shows no evidence of it with the Pfizer/BioNTech vaccine. The Israeli data shows less clots that would be expected in 5.3M people as there are less sick people lying in bed. All vaccines work because they alert the immune system to incoming nasties, rather than letting the immune system learn the hard way when the virus has multiplied in the body and already is causing damage.

In 1796 Dr Edward Jenner in England used live cowpox, a much milder but close relative of small pox, to vaccinate a 12 year old boy against smallpox, and in 1798 Lois Pasteur in Paris developed a cholera vaccine, by isolating a far less virulent variant. Buddhist monks in China were already using tiny quantities of the fluid from the pox of cholera, patients poked into their skin with a stylus to give themselves a low dose to confer immunity so they could look after patients.

We have now just learnt to do it with inactivated infections [eg polio] or just tiny but relevant portions of the coating [eg fluvax] or just a few molecules from the coronavirus spike [eg Pfizer/BioNTech COVID-19 vaccine]. This way we can't accidently start a new variant of a disease off or pass even a mild dose in the patient to someone who is vulnerable, as a NZ mum did to her baby with polio back in the early 1970’s with the first polio vaccine which was a mild variant, but live.

While we have known about mRNA vaccines for more than 5 years, Pfizer/BioNTech and Moderna [the one Dolly Parton has helped fund] are the first examples of this really pared back vaccine. We know it doesn’t work in over 4% people at developing an effective immune response: for the 19 out of 20 who do get immunity we don't yet know how long the response lasts and whether we will all need boosters.

But the Israeli data isn't showing HrTT as a complication and is bringing the epidemic under control in that country and people are back at work, school and in restaurants

and bars like we are. Yet the number of new cases continues to go down. I am grateful that the extra cost of this vaccine did not stop our politicians from choosing it, and the Israeli proactive leadership here and close monitoring has given us the way forward, free from this complication of other vaccines.

Boosters.
Only when studies of serology are in, will we know if we need boosters and when. Blood tests of serology- actually measuring the number of effective immune cells primed to fight off the COVID-19 virus - is being done to sort out these issues. In Israel for instance, currently over 400K non-vaccinated people are known to have positive serology - that is they have been exposed to the actual COVID-19 virus- which is less than 0.5% population.

They undertook extensive testing before vaccinations, to help understand the impact of vaccination. Despite that, they vaccinated all people with positive serology, so even our four patients who have cause to suspect they had the infection [from the days before testing was available, or when they were overseas] are advised to be vaccinated. Vaccination may provoke a strong antibody response, with the person achy, headaches, a very sore arm and feel fluey, all of which are safer than getting COVID-19.

What I have written above also answers the question, can you get COVID-19 more than once?

It depends on the individual’s immune response, and how much the virus has changed. Cowpox had evolved into a very mild illness which rarely caused scars, and infected only people who milked cows, yet was still capable of protecting people against its vicious cousin - Smallpox which killed about 40%. The 3-4 corona virus infections we have circulating in New Zealand have calmed down into just the 'common cold'.

You can get serology tests done in New Zealand at the laboratories if you believe you have had
COVID-19 sometime in the past. However they will cost somewhere around $90-$100 each. And we still don't know how relevant this is, as the protection may have already have waned off.
The studies will come in, and I will be reading them. As it comes clear I will blog about them.

Influenza jabs are here but only the type allocated to the over 65 year olds. The other sort isn't here until mid-May!

We are doing clinics every day Monday to Friday 11am-12pm outside the front surgery.
Remember sooner the better as a two week gap has to be left between fluvax and the COVID-19
Vaccination. Both illnesses kill. Because of Lockdown, good social distancing and hand sanitising, the lack of influenza in 2020 gave us 300 less people dying.

It could have been you or me. Have both immunisations! I have.
Until next blog, keep well, keep safe. Jacqueline