

Q) Can I take a different brand of COVID vaccine for my booster dose than was used for my initial dose?

A) We held off on addressing this question last week as we were awaiting information from two new studies that were due to be released in May. Since then, one of the studies which is being conducted in Spain has published their early results and the options regarding which booster doses are available to us has changed as well. On May the 21st, Ontario's Chief Medical Officer of Health Dr. David Williams announced that all of this province's citizens who had previously been vaccinated with the AstraZeneca (AZ) brand would now be offered a second dose of it. Those who were vaccinated initially between the dates of March the 10th and 19th will be able to receive their booster dose starting the week of May the 24th. This means that some may receive their second dose after only a 10 week interval which is less than the 14 week gap Ontario had been using when vaccines were in such short supply. The reasons behind this sudden change in recommendations (recall that as of last week, the continued use of this vaccine in anyone was suspended) are three-fold. First off there is new data indicating the second dose is safer than the first. We already knew that people tended to have less of the benign and more typical side effects (fatigue, pain in the arm, flu like symptoms) with the second dose than they may have experienced with their first injection. Now new data indicates that those rare, but potentially deadly blood clots are far more uncommon with the second dose as well. It is estimated, based on data from Britain, that the risk is only one in 600,000 people, far less than the 1 in 26,000 to 127,000 seen with the initial dose. Beyond safety, another reason Ontario may be pushing the second dose of AZ forward is more new data from the UK that shows that two doses of this vaccine work far better than a single dose when it comes to fighting off the variant that is currently plaguing India & is expected to continue its spread worldwide. Researchers say that one dose of the AZ vaccine is only 33% effective against this variant (& 50% against the Kent variant) but that its ability to prevent symptomatic disease jumped all the way up to 60% after the second dose (we should note that the Pfizer vaccine was even better as it went from 33% with one dose to 88% after two, although there are

some who think that the AZ numbers will continue to rise as it may be a slower acting vaccine). The third reason is one of practicality. We have 55,000 shots on hand of the AZ vaccine, with some set to expire by the end of May. As well, we have another 250,000 doses due to arrive this week. They have been bought and paid for, are highly effective, and as Manitoba has shown us, we are in a race against time with this virus so one can make an argument for putting them to use now. What remains to be seen is whether the million or so Ontarians who have already received a dose of the AZ will be given the option of switching to one of the mRNA vaccines for their booster shot. We have had two studies come out looking at this issue with one being based in the UK and the other in Spain, as we mentioned earlier. The UK study is still waiting to release its results regarding the effectiveness of combining vaccines (which is expected almost any day now) but they have commented on the risk of side effects when this is done. The 830 volunteers were administered either an AZ vaccine first followed by the Pfizer one, or vice versa. Based on the numbers, combining vaccines tends to lead to an increased risk of non-dangerous, but still unpleasant side effects such as chills (as an illustration, this occurred in 10% of recipients with AZ alone, 25% with Pfizer both times, and this occurred 40 to 45% of the time when the vaccines were mixed), feverishness, fatigue, headache, malaise, joint pain and muscle ache. Most of these effects were of a mild to moderate intensity and lasted only a few days. It should also be noted that none were serious enough to send any of the volunteers to the hospital for treatment. These sorts of reactions tend to occur because the shot initially stimulates the body's immune system triggering a short-lived inflammatory response. Some researchers believe that this increased incidence of minor side effects may well be a good thing as it might indicate a more robust immune response from our bodies. The results recently reported in the study done in Spain lend credence to this theory. The Spanish study was conducted in 670 adults between the ages of 18 and 59. All received an initial dose of the AZ vaccine. Subsequently 450 of them were given the Pfizer vaccine for the follow-up shot with the rest receiving a second AZ injection for comparisons sake. The researchers then took blood samples from both groups and found that the presence of IgG antibodies was between 30 to 40 times higher

in people who received two different vaccines. As well, there was an increase in the presence of neutralizing antibodies which was more than double in the mixed group when compared to the AZ group on its own. While this is not direct proof that mixing vaccines will prevent hospitalizations and death, the increases in these immune markers are a very positive sign that the strategy should be very effective. In fact, some scientists have believed all along that we should be mixing our vaccines even if supply was not an issue. This is because mixing vaccines could give you a broader type of immune response. Theoretically it should provide us with a wider range of antibodies or T cells as different vaccines seem to affect these immune fighters to greater or lesser extents. As well, vaccines train our immune system to identify the virus by looking for “markers” on the virus. Different vaccines identify disparate targets on the virus. Therefore combining them should increase the probability that if a new variant arises, at least some of the antibodies circulating through your system should be able to locate the imposter and attack it. In fact, we have been combining vaccine types for years in an effort to boost immune responses to diseases such as the Ebola virus, HIV, various cancers and malaria. One last note before we wrap up. The Spanish study found that the side effects produced from mixing vaccines were far less common in their patient group than was seen in the UK study we commented upon previously. Only 1.6% of participants reported side effects that were severe and the nature of these were still limited to benign complaints such as a headache, muscle pain and malaise. There were no serious side effects noted. Canada is currently recruiting volunteers to run their own study on combining the 3 main vaccines we use over here (the two mentioned above plus the Moderna one) in various combinations as well as the consequences of delaying the second dose by four months. The study will involve six different sites across the country and approximately 1,300 volunteers. This will, of course, provide even more information towards answering our question but the still early returns seem promising. Mixing vaccines looks to be very safe and quite likely just as effective, if not more so. For more information about this or any other health related questions, contact the pharmacists at Gordon Pharmasave, Your Health and Wellness Destination.

