

## **Cancer Research Malaysia - Virtual Lab Tour**

**4th November 2020**

### **Q&A Session**

1. How has covid impacted your research at CRM?

A: Covid has disrupted many of our experiments. Much of our research deals with testing new treatments and these experiments have been disrupted because of the movement controls. Covid has also disrupted our patient navigation programme, because each of the hospitals that we work in are also major covid-response hospitals. As a consequence, some of the essential services have been disrupted. But we are doing what we can to resume as many services as possible. For example, we have established telephone services and are working towards resuming face to face services soon.

2. What is the difference in terms of the cost for treatment between therapy vaccines and chemotherapy?

A: There are many types of immunotherapy - currently the approved ones such as checkpoint inhibitors are costly, we expect these to come down in time, and we are also looking to develop different types of immunotherapies that are more affordable.

3. Does the low survival rate in low to middle income countries is because the cost for treatment is too high?

A: A major reason is that cancers are diagnosed at late stages in low and middle income countries, and late stage diseases are more difficult to cure and more costly to treat. The second reason is as you pointed out, that there are not enough centres, doctors, and money to treat cancer effectively.

4. What does the recovery process look like for the therapy vaccines compared to chemotherapy, which is largely perceived to be a very taxing process for the patient?

A: Thus far, patients who received vaccine therapy demonstrated minimal side effects as the cancer vaccine works to kill cancer cells specifically. We would expect the similar side effect in our vaccine.

5. Do you think the duration of clinical trials done and procedures to bring cancer drugs into the pharmaceutical industry straight from research is still difficult with many restrictions? How can we overcome this in the best way because every year the government is also investing money into the research being conducted at higher institutions.

A: I agree with you that the procedure for clinical trials is still very difficult because it needs investment, infrastructure and manpower/expertise. One good move for Malaysia is the establishment of “Clinical Research Malaysia” - a new agency that is owned by the Ministry of Health and Ministry of Finance that seeks to bring more clinical trials to Malaysia. By setting up the infrastructure and improving the manpower/expertise for trials, the landscape for clinical trials is improving. Cancer Research Malaysia is working closely with universities to take forward cancer clinical trials. For example, using our Asian breast cancer genomics map, we have started a clinical trial testing immunotherapy in Asian breast cancer patients. This trial opened in UM and NUH (Singapore) in July of this year, and we look forward to more trials of this sort.

6. Is there any support from the government for cancer research institute in Malaysia?

A: We are not directly funded by the government. Like the universities, we apply for research grants. Unfortunately, there isn't enough money to do cancer research from government grants.

7. Aside from the vaccines for head and neck cancer, is it likely that vaccines for other types of cancer can be created?

A: Yes, the vaccine we designed is specifically targeted to two unique proteins. We actually have data showing that these proteins are present in other cancers as well, with further testing these cancers are likely to benefit this cancer vaccine. Using the similar approach, we can design and develop vaccines for other types of cancers.

8. If we have cancer now, can we use car-T immunotherapy?

A: It will depend on the type of cancer. Currently, CAR-T is developed to target specific proteins expressed by blood cancer. The development of CAR-T for solid tumour is underway.

9. What are the types of immunotherapy that is currently available in Malaysia?

A: Checkpoint immunotherapy is currently available for lung cancer, head and neck cancer and cancers that have a high mutation rate. In addition, there are existing treatments that also work by boosting the immune system, such as interferon therapy for liver cancer.

10. Are there any current treatment options that use CRISPR?

A: Currently, CRISPR is used in clinical trials to edit immune cells outside the body before these cells are infused into the patients.

11. How about Lymphoma? If it is possible, which hospital can they go to?

A: To the best of our knowledge, there are studies going on in other countries. Do speak to your oncologist/hematologist about CAR-T for lymphoma.

12. Does CRM know parapsychology therapy can also cure cancer? I am a parapsychologist and systematic constellation therapist who has helped patients.

A: Mindset and coping skills are critical in survivorship for cancer. This includes mindfulness based behavioural therapy, etc. but is it unlikely that it will work on its own and will need to be combined with an active treatment.