December 20th, 2014

Taima TB - Interferon Gamma Release Assay (IGRA) Research Project Results

A lay summary of the paper "The feasibility, precision, and potential public health impact of the Interferon Gamma Release Assay for the diagnosis of latent TB infection in Iqaluit, Nunavut" that was published in the journal "PLoS One" in November, 2014

Another part of the Taima TB-Iqaluit research project looked at a new test for 'sleeping' TB that is available in other parts of Canada and the world. This new test is called the Interferon Gamma Release Assay. We call it IGRA for short. The test that we usually use for 'sleeping' TB is called the Tuberculin Skin Test, or TST for short. The IGRA is different from the TST in 2 ways:

1. IGRA is a blood test. **A person only needs to see the nurse once to get their blood taken.** With the TST, a person needs to go see the nurse twice. Once to get the TST injected, and once 48-72 hours later for the nurse to read the result. The nurse does not need any special training to do take blood for the IGRA test.
2. **The IGRA is supposed to tell the difference between someone who had the TB vaccine and someone who really has 'sleeping' TB**. Sometimes people who got a vaccine for TB can have a positive TST even if they don't have 'sleeping' TB. This may be useful in Nunavut where many people have had this vaccine. In the Taima TB study, 70% of the participants had gotten this vaccine, called the BCG vaccine.

In this part of the project, 296 people were eligible to be tested for 'sleeping' TB with the IGRA and the TST.

Will this new blood test make a difference to the health of Iqalummuit?

This study showed the following things:

1. **It is possible to provide the IGRA to residents of a remote Arctic community like Iqaluit**. 95% of the patients in this study tested received results to an IGRA test.
2. **More patients were able to receive the results of their IGRA test than the TST.** Almost 10% of the TSTs did not have a result because the test could not be read within 48-72 hours window that is required to have a valid test. Of all the patients eligible for testing, 5.4% did not have a result for their IGRA test because the nurse was unable to draw the blood or there were lab or sample transportation issues.
3. **It took longer for patients to get the result of their IGRA test that the TST.** The IGRA blood samples were sent to a laboratory in Ottawa for testing. This meant that it took an average of 8 days for the results to get back to the patient. Flight schedules affected how long it would take for the sample to get to Ottawa. It took an average of 2 days for study patients to get the result of their TST.
4. **IGRA testing could result in fewer patients requiring treatment for latent "sleeping" TB infection**, especially in those that have been previously vaccinated with BCG. For 83% of the patients who got both IGRA and TST tests, they both had the same result. Either both tests were negative showing that the patient does not have 'sleeping' TB or both were positive showing that the patient likely has 'sleeping' TB. For 15% of the patients in the study, the IGRA was negative and the TST was positive. This may have been because they had the BCG vaccine which is affecting the result of the TST.