PROJECT TITLE

From Liquid Biopsy to Cure: Using ctDNA detection of minimal residual disease to identify patients for curative therapy after lung cancer resection

PRINCIPAL INVESTIGATOR

Dr. Natasha Leighl – University Health Network

SCIENTIFIC SUMMARY

Lung cancer is the leading cause of cancer and cancer deaths in Ontario and globally. Although 40 per cent of people with lung cancer have early-stage disease that can be removed with surgery, the risk of returning cancer and death remains high. Currently, we do not have the tools to know who is at risk of their cancer returning. Recently, blood tests called liquid biopsies have been developed that can detect evidence of persisting cancer cells by finding genetic material from cancer, called circulating tumour DNA (ctDNA) in blood. ctDNA levels can also be followed over time or monitored for changes. If a person has high levels of ctDNA detected after surgery, or their ctDNA levels start to rise, giving them protective treatment to kill any remaining cancer cells may help cure them. This study is looking at the use of ctDNA levels to identify lung cancer patients after surgery at high risk of cancer returning. For those found to be at high risk, the team will offer cancer drug therapy to try and prevent recurrence. In the future, this means doctors could use a liquid biopsy blood test to decide who is at high risk of recurrence after surgery, and who needs treatment with additional drug therapy after surgery to prevent recurrence and increase the chance of cure.