BC CANCER FOUNDATION

Supporting the BC Cancer Agency

Thank You for Advancing Cancer Research

September 2017

Impact Report for Climbers Against Cancer

Since your generous contribution in 2013, BC Cancer has made great strides in advancing our understanding and treatment of cancer through world-leading research.

The generosity of donors like you allows the best and brightest scientific minds to reach new heights of achievement. And it's working. Here are just a few examples of progress made possible thanks to support like yours.

POG Achieves New Milestones

Personalized Onco-Genomics (POG), the revolutionary precision medicine program funded by BC Cancer Foundation donors, has enrolled over 900 patients. POG aims to decode an individual's cancer, looking at the specific mutations that cause cancer to develop. Doctors can then customize treatment options to target those mutations. The next phase of this project, led by Medical Oncologist Dr. Janessa Laskin and Genome Sciences Centre Director Dr. Marco Marra, will see the number of patients expand to 5,000, setting a global precedent both in terms of the diversity of cancers investigated and the number of participants.

Preparations Underway for Immunotherapy Trials

Building on a decade of research and the strength of BC Cancer's Deeley Research Centre, clinical trials for Adoptive T Cell Immunotherapy will commence next year for patients with cervical and ovarian cancer. Patients' T cells will be collected from a tumour biopsy, extracted, activated and expanded into large numbers in a highly specialized lab. These cells will then be infused back into the patient's blood stream to launch a response against every cancer cell in the body. Preparations are also underway for CAR-T immunotherapy trials, which genetically engineer T-cells to recognize cancer cells. These trials will enroll patients with lymphoid cancers.

Better Treatment Options for Advanced Prostate Cancer

A new prostate cancer drug, developed over a decade by Dr. Marianne Sadar, entered human clinical trials in 2015. Designed to target and shut down metastatic castration-resistant prostate cancer when other treatments have failed, this discovery brings hope to those with the most aggressive form of the disease. Medical Oncologist Dr. Kim Chi has also demonstrated how cancer-derived DNA from a simple blood test has the potential to determine prognosis and guide treatment decisions.

Expanding our knowledge of ovarian cancer

Senior Scientist Dr. Sohrab Shah and his team have uncovered seven new subtypes of ovarian cancer, which could result in new treatment strategies for some ovarian cancer patients including those that do not respond well to chemotherapy. Two of the new genetic subtypes uncovered belong to a very common and deadly form of ovarian cancer called high grade serous carcinoma (HGSC). The team believes they have found a structural change in the DNA of one subtype that can identify HGSC patients that will not respond to chemotherapy and who may instead benefit from new classes of treatments.

Breast Cancer Discoveries Set to Change Treatment Protocols

In 2016, Distinguished Scientist Dr. Samuel Aparicio and his team mapped the relationship between cancer mutations and clinical outcomes in 2,433 women. The team proved that what lies beneath the surface is critical: no two breast cancers are the same. By delving deeper into the biological make-up of breast cancer, the team uncovered a host of mutations already linked to other cancer types that could immediately help to expand treatment options.

Earlier this year, Dr. Aparicio's team celebrated two exciting drug discoveries. Both are opening up new approaches to targeting breast cancers more specifically, by exploiting mutations present in cancer cells that are not present in normal cells. The first discovery, which has already led to a clinical trial, exploits the inability of BRCA1/2 deficient cancers to repair their own DNA. The second discovery is of a drug-like molecule that can alter the way cells translate genetic information into proteins.

A new treatment approach comes to B.C.

Thanks to donor support, we are closer to bringing a new treatment option to B.C. CancerTRACER relies on injecting a cell-targeting protein combined with a small amount of radioactive material into a patient's bloodstream. The protein hunts down and binds itself to the cancerous tumour cells, and only then does it deliver a high dose of radiation directly to the cancer, avoiding healthy tissue. Clinical trials will begin for patients with neuro-endocrine tumours, and will later expand to treat other cancers like prostate, pancreatic, melanoma and breast.

Thank you for your commitment to cancer research

Research makes a tangible difference in the lives of cancer patients and their families. Findings from the outstanding research that takes place at the BC Cancer Agency are providing cancer patients in B.C. with some of the best outcomes in the country, and these findings are shared across the world to benefit cancer patients worldwide. Thank you for your support of the BC Cancer Foundation and commitment to research.

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