

British Columbia Cancer Agency

Centre for Lymphoid Cancer *Newsletter*

Lymphoma ♦ Leukemia ♦ Myeloma

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dedicated to curing the lymphoid cancers

April 2015

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This issue of the newsletter will provide an update on the progress of the Personalized Treatment of Lymphoid Cancers project.

Update: Personalized Treatment of Lymphoid Cancer Project

Personalized or Precision cancer treatment means determining the specific genetic characteristics of a patient and that patient's cancer to identify treatment that is uniquely designed for that individual. Since each cell, cancer or normal, has a set of genetic instructions composed of about 3 billion chemical structures arranged like beads on a string and grouped in shorter strings called genes, scientists have only been able to decode the complete genetic instructions in cancer and normal cells in the past few years. A special type of analysis called genomic sequencing is now able to accurately decode the entire set of genetic instructions in each cell at a reasonable cost, opening the possibility that doctors will be able to learn the precise genetic abnormalities present in a particular patient's malignant cells and, using this information, choose treatments that are specifically designed for that individual.

As a group the lymphoid cancers are the 4th most common cancer seen in Canadians and have been increasing in incidence for more than 70 years. These cancers that develop in the cells of the immune system, white blood cells called lymphocytes. Lymphoid cancers are special because even when they have spread widely in the body they can sometimes still be cured with

medications. Today, doctors recognize more than 30 different types of lymphoid cancers, many of which can be cured. Recently, we and other researchers have been able to show that genomic sequencing can identify special lymphoid cancers that are resistant to current standard treatments but may be curable with special personally designed (personalized) treatment. Such precision treatment may be more effective at curing these special subtypes of lymphoid cancer and, by being more effective, should save precious health care dollars.

In the first two years of this research project we have been able to enroll more than 300 patients across the province from all six BCCA Centres as well as several other hospitals and private physician's offices. The map below illustrates the truly provincial nature of this project (each red symbol represents one patient).



We are on the verge of an exciting new era of cancer treatment in which genomic analysis of each individual patient and their cancer leads directly to specific personalized treatment. This project aims to show how this can be done on a provincial scale and how similar precision medical care can be economically provided in the future. Patients with lymphoma or lymphocytic leukemia can help this project succeed by volunteering to participate. Just let us know you are interested.

Lymphoid Cancer Education Day

22 May 2015

Our annual BCCA-CLC Lymphoid Cancer Education Day will be held on Friday May 22, 2015 at the Jewish Community Center at the 41st and Oak (950 West 41st Ave). More than 200 patients, family members and friends interested in the lymphoid cancers will gather for presentations by researchers from the BC Cancer Agency, the BC Cancer Research Center and the BCCA Genome Sciences Center. These presentations are open to patients, their families and interested members of the public and will address the basic biology, causes, inheritance and new treatments for lymphoid cancers and related patient advocacy for research and health care funding.

Participants have valued these Education Days in the past as helpful and informative. The opportunity to network and the array of informational materials from the *Centre for Lymphoid Cancer*, the Lymphoma Foundation Canada and the Leukemia Lymphoma Society are particularly valuable. We will continue to offer a Lymphoid Cancer Education Day annually and invite you to identify topics of interest.

Details about Lymphoid Cancer Education Day: <http://www.bccancer.bc.ca/ABCCA/comingevents/default>. Seating is limited and the event usually fills up so be sure to register by phoning 604-877-6000 extension 672196 (outside Vancouver call 1-800-663-3333 extension 672196).

Recent Publications

We thought you might be interested in some recent publications describing CLC research:

- Comprehensive miRNA sequence analysis reveals survival differences in diffuse large B-cell lymphoma patients

<http://genomebiology.com/content/pdf/s13059-014-0568-y.pdf>

- An RCOR1 loss-associated gene expression signature identifies a prognostically significant DLBCL subgroup

<http://www.bloodjournal.org/content/bloodjournal/125/6/959.full.pdf>

-Recurrent genomic rearrangements in primary testicular lymphoma.

<http://www.ncbi.nlm.nih.gov/pubmed/25712539>

-Outcome of patients with non-Hodgkin lymphomas with concurrent MYC and BCL2 rearrangements treated with CODOX-M/IVAC with rituximab followed by hematopoietic stem cell transplantation.

<http://www.ncbi.nlm.nih.gov/pubmed/25656914>

-Genetic inactivation of TRAF3 in canine and human B-cell lymphoma.

<http://www.bloodjournal.org/content/bloodjournal/125/6/999.full.pdf>

-Risk assessment in the management of newly diagnosed classical Hodgkin lymphoma.

<http://www.ncbi.nlm.nih.gov/pubmed/25575542>

-Emerging biological insights and novel treatment strategies in primary mediastinal large B-cell lymphoma.

<http://www.ncbi.nlm.nih.gov/pubmed/25805591>

-Tumor-associated macrophages in diffuse large B-cell lymphoma.

<http://www.haematologica.org/content/haematol/100/2/143.full.pdf>

-Structural genomic alterations in primary mediastinal large B-cell lymphoma.

<http://www.ncbi.nlm.nih.gov/pubmed/25393674>

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