

Myeloma Research in the Atlantic Cancer Consortium

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Scientific abstract:

Background and rationale: Multiple myeloma is an incurable cancer. While scientific advances have led to improved clinical outcomes, a better understanding of disease biology to inform better and more personalized therapies is still needed.

Objectives: To develop better biomarkers for myeloma etiology, risk stratification and therapeutic monitoring; and to develop novel treatment approaches.

Methods and Results: In the Atlantic Cancer Consortium, several investigators are investigating the biology and treatment of myeloma as part of the Marathon of Hope Cancer Centres Network. Myeloma patients are enrolled in the Gold Cohort, providing their whole genome and transcriptome sequences and clinical outcomes data. Investigators in the region are characterizing: (1) The roles of genetics and environment in the pathogenesis of myeloma; (2) Approaches to improved patient risk stratification; (3) The clinical integration of novel methods of disease characterization and monitoring, including minimal residual disease testing, proteomics and metabolomics; and (4) The return of genomic results to clinicians and patients; and (5) The pre-clinical development of novel therapies.

Conclusions: This work contributes to our understanding of multiple myeloma biology and informs the development of rational strategies to improve patient care.

Plain language abstract:

Background and rationale: Multiple myeloma is an incurable bone marrow cancer. While scientific advances have led to life-extending treatments, more work is needed to improve life expectancy and quality of life for people with this cancer. A cure is still being sought.

Objectives: To develop better biomarkers for multiple myeloma etiology, risk stratification and therapeutic monitoring; and to develop novel treatment approaches.

Methods and Results: In the Atlantic Cancer Consortium, several investigators are investigating the biology and treatment of multiple myeloma as part of Marathon of Hope Cancer Centres Network. Myeloma patients are amongst the 15,000 Canadians included in the Gold Cohort, in which all the genes in their cancer are examined in detail. Our research is also examining: (1) The roles of inheritance and environmental factors in the development of myeloma; (2) improving our ability to predict life expectancy for people with myeloma; (3) advancing our understanding about how myeloma cells work and how to monitor the disease; (4) reporting our genetic analysis of individual myeloma patients to their myeloma doctors so

that this information can be considered in the course of patient care; and (5) The development of new approaches to myeloma treatment in the laboratory setting.

Conclusions: This research aims to uncover important aspects of the unique biology of each myeloma case that can be applied towards personalizing myeloma care.