**A cure-rate model for estimating the optimal dynamic treatment sequence following bone marrow transplantation**

Erica Moodie*
McGill University, Canada– erica.moodie@mcgill.ca

Determining the optimal sequence of treatments is an area of active research in the statistical, computer sciences, and medical communities. Much of the methodological work done to date has focused on the continuous outcome settings. While extensions to time-to-event settings have been considered, the methods do not conform to a wide variety of problems in which we would like to optimize treatment sequences. Take for example, the role of immunosuppressive therapy that depletes T cells in prophylaxis and treatment of graft-versus-host-disease (GVHD). To address the question of whether the sequence of administration of non-specific, highly T-lymphodepleting therapies in GVHD prophylaxis and in treatment of refractory GVHD impacts survival, and to identify donor-related and patient-related factors that may guide individualized selection of the classes and sequence of immunosuppressive agents over time, we develop a parametric cure-rate model and apply it to a large cohort drawn from a bone marrow transplantation registry from 1995 to 2007.