Transplant Infectious Diseases Fellowship

Our Mission Statement

“To have a global impact through our program by providing state of the art patient care, preparing future Transplant Infectious Diseases physicians and advancing translational research in the field of Transplant Infectious Diseases.”

Infections produce significant morbidity and mortality in transplant recipients. These patients are unique in the complexity of their immune deficits, in their predisposition to opportunistic infection, necessary diagnostic interventions and in the need to understand the management of antimicrobial therapies and possible ensuing drug interactions for optimal clinical care. The goal of the program can be achieved by integrating patient care with the training of superb clinicians and research.

The program strives to achieve excellence by concentrating on three main areas which include Clinical Care, Education and Research.

Clinical Care

- Clinical care will be provided on the cardinal principles of availability, affability and ability. An inpatient consult service is available throughout the year with designated staff. There is an emphasis on multidisciplinary collaboration with each individual transplant program in order to provide optimal patient-centered care in both the inpatient and outpatient settings.
- Outpatient clinics are provided 4 days a week. In the future, clinic expansion may occur with clinics specifically for pre-transplant screening, vaccination, travel issues and management of CMV infections in transplant recipients.
- Clinical Practice Guidelines/Protocols have been created for the management of complex infectious diseases syndromes in the transplant patient population.

Education

- Education is a cornerstone of the program. Educational support is provided for each individual in the transplant program tailored to individual objectives but also to ensure that clinical training meets a high standard of care and that physicians are well rounded with both clinical and research experience.
- The program ensures that fellows will acquire the skills and expertise to develop guidelines for the prevention and management of infections for transplant recipients to minimize infection-related morbidity and mortality.
- The program has developed and maintained an updated web-based teaching resource for all individuals related to topics presented at the rounds and conferences of the program.
- The program also offers elective experience in Transplant Infectious Diseases for residents in Infectious Diseases, Medical Microbiology and Critical Care
programs of the University of Toronto as well as other interested individuals from around the world.

- Our goal is to develop a world class Transplant Infectious Disease Fellowship Program that provides advanced training in the clinical care and clinical investigation of Infectious Diseases related to immunocompromised hosts (enclosed).

Research

The program will have a special emphasis on clinical research that enhances translational research in the field of Transplant Infectious Diseases. We plan to do so by developing a close collaboration with the investigators at the University of Toronto in particular, as well as other interested universities.

Clinical research will focus on three main avenues:

1. Exploring the relationship between infections (viral, atypical organisms) and rejection in transplant recipients.
2. Epidemiological studies of infections in solid organ transplant recipients and those with hematological malignancies.
3. Randomized clinical trials assessing newer therapies or various prophylactic therapies in transplant recipients.

Transitional research will primarily focus on:

1. Determining the immunological mechanisms and novel makers for the development of viral or fungal diseases affecting transplant recipients.
2. The development and refinement of new methods for diagnosing viral and fungal infections.
Our Staff

**Dr. Shahid Husain**
Associate Professor of Medicine,
Division of Infectious Diseases
Co-Director, Transplant Infectious Diseases
Director, of Solid Organ Transplant Infectious Diseases
Director, Transplant Infectious Diseases Fellowship Training Program

**Dr. Coleman Rotstein**
Professor of Medicine,
Division of Infectious Diseases
Co-Director, Transplant Infectious Diseases
Director, Oncologic Infectious Diseases

**Yinka Akinlolu**
Research Coordinator,
Transplant Infectious Diseases

**Tiffany La**
Administrative Assistant,
Fellowship Coordinator,
Transplant Infectious Diseases
What We Do - Education

Education at all levels is mandatory to sustain professional knowledge and skills. Teaching is therefore a noble obligation of all academic staff. The table below summarizes the levels of educational programs offered in our program from 2008-2010.

Educational Programs

<table>
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<tr>
<th>Training Program &amp; Duration</th>
<th>Description (Expectations &amp; Opportunities)</th>
<th>Funding</th>
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<tbody>
<tr>
<td>Fellows</td>
<td>Clinical experience</td>
<td>MOT program (2 fellows per academic year)</td>
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| 2 years                     | • In-patient Infectious Disease (ID) Consult Service (Solid-Organ Transplant (SOT), Leukemia Service and Stem Cell/Bone Marrow Transplantation (BMT))  
|                             | • Outpatient Transplant ID Clinic (Longitudinal, one half day per week)  
|                             | These rotations specifically cover the following learning objectives:  
|                             | a) To understand the pathobiopogy of the immunocompromised state and the concomitant susceptibility to infection that occurs.  
|                             | b) To appreciate the unique interactions between the host, immunosuppressive agents and the acquisition of infection endogenously or from the environment.  
|                             | c) To understand current donor and recipient screening (both serologic and clinical) and to manage donor derived infections.  
|                             | d) To become familiar with the time course and gain experience in managing viral, fungal and bacterial infections in SOT recipients after transplantation.  
|                             | e) To understand and manage drug interactions and toxicities of antimicrobial agents and immunosuppressive drugs.  
|                             | f) To understand the potential complications that may be associated with various techniques utilized in liver transplantation including deceased donor, living-donor and split liver transplantation. We discuss the relationships between surgical complications such as bile leaks and infectious risks in these patients.  
|                             | g) To learn management of common post-surgical complications such as lymphoceles (kidney) and pleural effusion/empyema/anastamotic leak (lung), bleeding (heart).  
|                             | h) To learn characteristics, advantages, and disadvantages of the main diagnostic modalities utilized for cytomegalovirus (CMV) detection                                                                                       | Other sources include international government/funding agency/employer |
(tissue culture, shell vial, serology, antigenemia, NAT). Differentiate prophylactic and pre-emptive therapy for CMV infection and list advantages and disadvantages of each. Learn about the emergence of resistance and late onset CMV disease in patients. Learn management of resistance and non-resistant CMV infection.

i) Learn management issues in HIV transplant recipients.

j) Learn management of infections in patients bridged to transplant on ventricular-assist devices (VADs). To learn and understand post-transplant implications and management of these infections.

k) Become aware of the transition of infection management in immunocompromised hosts from the inpatient to the outpatient setting.

**Educational**

Attendance at Multi-Organ Transplant (MOT) grand rounds, TID Journal Club, ID/Microbiology Rounds, ID case conferences, and research rounds.

**Research**

Each fellow is expected to complete at least one independent research project during the course of their fellowship with peer reviewed publications or a presentation in a research meeting.

| **Residents** (mandated elective) 4-6/year | In-patient ID Consult Service (SOT and Stem Cell/BMT):
| | a) To understand current donor and recipient screening (both serologic and clinical) and to manage donor derived infections.
| | b) To gain experience in managing viral, fungal and bacterial infections in immunocompromised hosts and SOT recipients after transplantation.
| | c) To understand and manage drug interactions and toxicities of antimicrobial agents and immunosuppressive drugs.
| | d) To understand the potential complications that may be associated with various techniques utilized in liver transplantation including deceased donor, living-donor and split liver transplantation. We discuss the relationships between surgical complications such as bile leaks and infectious risks in these patients.
| | e) To learn management of common post-surgical complications such as lymphoceles (kidney) and pleural effusion/empyema/anastamotic leak (lung), bleeding (heart).
| | f) Learn management of infections in patients bridged to transplant on ventricular-assist devices (VADs). To learn and understand post-transplant | N/A |
implications and management of these infections.

**Educational**
- Attendance at MOT grand rounds, TID journal club, case conference, and research rounds.

<table>
<thead>
<tr>
<th>Medical Students 3-4/year</th>
<th>Inpatient rounds with TID attending</th>
<th>Attend post-transplant clinics, journal club and seminars</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Observers 1-2/year</td>
<td>Inpatient rounds with TID attending</td>
<td>Attend post-transplant clinics, journal club and seminars</td>
<td>N/A</td>
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**Undergraduate and Graduate Education**

**Observerships**

We offer Observerships for international faculty. During the Observership, individuals are exposed to the breadth of clinical experience at our center. They observe patients in both inpatient and outpatient settings for a period of six months.

**Electives**

We are aptly aware of our responsibility to provide clinical experience in Transplant Infectious Diseases to other Canadian, American and/or international centers. Electives in our program are offered in both solid-organ and stem-cell Transplant Infectious Diseases. These applicants generally are fellows that have been referred to our program seeking specialized experience.

**Postgraduate Education**

**Transplant Infectious Diseases Fellowship**

Our fellows are integral to the research endeavors of our program. They have to date published 7 peer reviewed publications and presented more than 10 abstracts at international conferences.

**Transplant Infectious Diseases Clinical Fellows 2009-2010**

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<tr>
<th>Year</th>
<th>Name</th>
<th>Pre-Fellowship Institution</th>
<th>Post-Fellowship Institution</th>
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<tbody>
<tr>
<td>2009-2012</td>
<td>Samira M. Fallatah, MD</td>
<td>Armed Forces Hospitals, Saudi Arabia</td>
<td>Currently at UHN</td>
</tr>
<tr>
<td>2009-2011</td>
<td>Seyed M. Hosseini-Moghaddam, MD</td>
<td>Shaheed Beheshti University of Medical Sciences and Health Services, Iran</td>
<td>Currently at UHN</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Chian-Yong Low, MD</td>
<td>Singapore General Hospital, Singapore</td>
<td>Singapore General Hospital, Singapore</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Eugene Katchman, MD</td>
<td>Tel-Aviv Sourasky Medical Center, Israel</td>
<td>Tel-Aviv Sourasky Medical Center, Israel</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Me-Linh Luong, MD</td>
<td>University of Pittsburgh Medical Centre, United States</td>
<td>CHUM-Hôpital Saint-Luc du CHUM, Quebec, Canada</td>
</tr>
<tr>
<td>2010-2012</td>
<td>Mariangela Resende, MD</td>
<td>State University of Campinas, Brazil</td>
<td>UNICAMP, University of Campinas, Sao Paulo, Brasil</td>
</tr>
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**Transplant Infectious Diseases Mycology Fellowship**

We have recently secured industry sponsorship for a Mycology Transplant Infectious Diseases Fellowship. The first candidate is scheduled to begin July 2012.
What We Do – Research

Research is one of the mission goals of the Transplant Infectious Diseases Program. Our group has been very productive over the last three years. We continue to publish regularly in high impact journals and have secured significant research funding. The following list of publications over the past three years summarizes the areas of active and ongoing research of our Program and details our research funding from 2008 to April 2011.

Publications 2008-2011

Original Manuscripts (peer reviewed)

2008


2009


2010


Book Chapters 2008-2010


Books 2010