

UNIVERSITY OF TORONTO

Microbiology & Infectious Diseases Research Days

Monday, June 3rd, 2019 – Trainee Day (Selected from Abstracts)

Tuesday, June 4th, 2019 – Invited Lectures & Poster Session

Talks in Medical Sciences Building, Room 2170

**Posters & Lunch in Medical Sciences Building,
Room 2171 (C. David Naylor Student Commons)**

Website: <http://microbeto.ca/mid-2019/>

Monday, June 3rd, 2019

9:30 - 9:40 WELCOME ADDRESS

9:45 – 10:00: Avid Mohammadi

Characterizing the impact of penile-vaginal sex on HIV-susceptible CD4⁺ T cell subsets in the female genital tract

10:05 - 10:20: Erin O. Y. Wong

Developing defined microbiota to model inflammation in the mouse gut

10:25 - 10:40: Nora Mellouk

An ATG16L1-dependent pathway promotes plasma membrane repair and limits *Listeria monocytogenes* cell-to-cell spread

10:45 - 11:15: COFFEE BREAK

11:20 - 11:35: Jean-Paul R. Soucy

Joint modelling of resistance to six antimicrobials in urinary *Escherichia coli* isolates in Quebec, Canada

11:40 – 11:55: Sarah Birstonas

EHEC utilizes two-component systems to modulate expression of major flagellar subunit protein, FliC, in response to host intestinal cues

12:00 - 12:15: Nathaniel Winsor

NLRP6 regulates the colonic mucus layer during *Trichomonas* infection

12:35 – 1:30: LUNCH

1:35 - 12:50: Samuel Salamun

Epstein-Barr Virus Protein BMRF1 Modulates Cellular SUMO and DNA Damage Response Pathways by Binding the Cellular NuRD Complex

1:55 - 2:10: Nicola Case

Elucidating the mechanism of *Candida albicans* morphogenesis in response to phagocytosis by macrophages

2:15 - 2:30: Sarah Kronheim

A small molecule anti-phage defense mechanism in *Streptomyces*

2.30 - 3:00: COFFEE BREAK

3:05 - 3:20: Alexandra Willis

Understanding inherited immunity using a *C. elegans* model of microsporidia infection

3:25 - 3:40: Genevieve Mailhot

Differentiating between protective and pathogenic neutrophil responses during *Neisseria gonorrhoeae* infection

3:45 – 4:00: Tiffany Fitzpatrick

Successes of anti-RSV prophylaxis among infants in Ontario: results from a multi-decade, population-based controlled interrupted time series analysis using health administrative data

Poster Presentations

47) Hematologic Parameters of Acute Dengue Fever versus Other Febrile Illnesses in Ambulatory Returned Travelers

Dylan Kain, Dale A. Jechel, Rochelle G. Melvin, Farah Jazuli, Jordan Mah, Michael Klowak, Stefanie Klowak and Andrea K. Boggild

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Dengue fever is a mosquito-borne acute febrile illness, which is acquired from the tropics and subtropics. Recent years have seen dramatic rises in the burden of dengue worldwide, including in travelers. Thrombocytopenia and lymphopenia are common hallmarks of dengue, however neutropenia is a prominent, yet less frequently reported trend. The importance of utilizing abnormal blood count findings for guiding the early diagnosis and treatment of dengue will be explored in this paper. A retrospective case control study was undertaken on data from February 2014 to December 2017. Patients presenting through the Rapid Assessment of Febrile Travelers program with dengue were compared to those presenting with other febrile illnesses (OFI). Patient demographic, day of illness, and available neutrophil, lymphocyte and platelet counts from day 1-14 of illness were collected. Analyses were stratified by day of illness. 18 patients were included in the dengue group and 151 were in the OFI group. Thrombocytopenia within the dengue cohort was found to be significantly greater than the OFI group (77.8% vs 23.2%, $p < 0.0001$). Neutropenia was also significantly more common in dengue patients than in those with OFI ($p < 0.0001$), with 72.2% vs. 12.6% of patients, respectively, demonstrating neutropenia during their illness. There was also a significant difference in the frequency of lymphopenia between the dengue and OFI study groups, 88.9% vs. 35.8% respectively ($p < 0.0001$). When grouped by day of illness, significantly lower mean platelet and neutrophil counts were evident in patients infected with dengue compared to the OFI group ($p < 0.0001$). In patients with a relevant travel history, neutropenia and thrombocytopenia should help guide provisional diagnosis of acute dengue infection. As advanced diagnostic testing is often inaccurate or delayed by prolonged turn-around times, these simple laboratory features can guide the early care and follow-up of febrile returned travelers with suspected dengue infection.