



RACP Foundation Research Awards

FINAL REPORT

Project / Program Title	Epidemiology and molecular diagnosis of Legionella infections in immunocompromised hosts	
Name	Dr Shobini Sivagnanam	
Award Received	2015 RACP Joseph Thornton Tweddle/NHF Health Profession Research Entry Scholarship	
Report Date	15 August 2018	
Chief Investigator / Supervisor	Shobini Sivagnanam / Steven A Pergam	
Administering Institution	Fred Hutchinson Cancer Research Center	
Funding Period	Start Date:	7 January 2015
	Finish Date:	7 January 2016

PROJECT SUMMARY

Legionella species are bacteria that can cause severe infections in patients with poor immune system. In the first part of our study, we performed a 15 year review of all Legionella infections in a large transplant centre and within the state, and described the clinical infections caused by these bacteria. Since culturing the Legionella bacteria to diagnose these infections can be very time consuming, in the second part of the study, we developed a molecular test (PCR) that can be used to rapidly identify Legionella species from transplant patients.

PROJECT AIMS / OBJECTIVES

1. Describe the epidemiology of Legionella infections, in particular the role non-pneumophila Legionella species play in clinical infections in the highly immunocompromised transplant hosts – this research has concluded and was presented at an infectious diseases conference and published in peer review journal.
2. Validate a polymerase chain reaction (PCR) based assay to detect Legionella species from bronchoalveolar lavage specimen in hematopoietic cell transplant recipients – this research has concluded and was presented at an infectious diseases conference as a poster.

Please find attached the publications for further information on research methodology, significance and outcome.

SIGNIFICANCE AND OUTCOMES

PUBLICATIONS / PRESENTATIONS

1. Sivagnanam S, Podczervinski S, Butler-Wu SM, Hawkins V, Stednick Z, Helbert LA, Glover WA, Whimbey E, Duchin J, Cheng GS, Pergam SA. Legionnaires' disease in transplant recipients: A 15-year retrospective study in a tertiary referral center. *Transpl Infect Dis.* 2017 Oct;19(5). doi: 10.1111/tid.12745.
2. Sivagnanam S, Pergam SA. Legionellosis in Transplantation. *Curr Infect Dis Rep.* 2016 Mar;18(3):9. doi: 10.1007/s11908-016-0517-x.
3. Sivagnanam S, Sengupta DJ, Hoogestraat D, Jain R, Stednick Z, Fredricks DN, Hendrie P, Whimbey E, Podczervinski ST, Krantz EM, Duchin JS, Pergam SA. Seasonal clustering of sinopulmonary mucormycosis in patients with hematologic malignancies at a large comprehensive cancer center. *Antimicrob Resist Infect Control.* 2017 Dec 6; 6: 123
4. An assessment of Legionella PCR using bronchoalveolar samples in hematopoietic cell transplantation. ASM microbe, Boston MA, USA, 2016 (poster presentation)
5. Role of non-pneumophila species in culture proven Legionellosis at a large tertiary medical center. Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington DC, USA, 2014 (poster presentation)
6. A cluster of sinopulmonary mucormycosis in patients with hematologic malignancies at a comprehensive cancer center. ID Week, San Diego CA, USA, 2015 (poster presentation)

I have since presented the research findings and a review of Legionella infections at Westmead hospital infectious diseases departmental journal club as well as at The Children's hospital at Westmead departmental teaching sessions.