



RACP Foundation Research Awards

YEAR 1 PROGRESS REPORT

Project / Program Title	Managing infectious complications in kidney transplantation	
Name	Dr Samuel Chan	
Award Received	2019 RACP Jacquot NHMRC Award for Excellence	
Report Date	4 May 2020	
Chief Investigator / Supervisor	Professor Carmel Hawley	
Administering Institution	The University of Queensland	
Funding Period	Start Date:	1 January 2019
	Finish Date:	30 September 2021

PROJECT SUMMARY

Infections are a common complication following kidney transplantation, and occur in more than 65% of kidney transplant recipients. In Australia, infection accounts for approximately 22% of deaths in the kidney transplant recipient population, with 75% of these deaths occurring in individuals with a functioning graft. My thesis will explore the predictors and pathogenesis of infectious complications following kidney transplantation, and examine the feasibility, safety and efficacy of innovative approaches to mitigate this burden.

PROJECT AIMS / OBJECTIVES

1. identify infection outcomes in the kidney transplant trials;
2. evaluate the incidence and outcomes of infectious deaths following kidney transplantation;
3. ascertain the impact of infectious complications on the quality of life of kidney transplant recipients;
4. evaluate the effect of peri-operative antibiotic use on post-kidney transplant infectious complications;
5. evaluate changes in the gastrointestinal microbiota following kidney transplantation and identify associations with clinical outcomes;
6. vi) examine whether prebiotic supplementation reduce infectious complications following kidney transplantation.

SIGNIFICANCE AND OUTCOMES

Thus far in my PhD, I have been able to define the burden of infectious complications in kidney transplant recipients and how it affects their quality of life. In the remaining 18 months of my PhD, I will

1. evaluate changes in the gastrointestinal microbiota following kidney transplantation and identify associations with clinical outcomes;
2. examine whether prebiotic supplementation reduce infectious complications following kidney transplantation.

PUBLICATIONS / PRESENTATIONS

1. Chan S, Ng S, Chan HP, Pascoe E, Playford EG, Wong G, Chapman JR, Lim WH, Francis RS, Isbel NM, Campbell SB, Hawley CM, Johnson DW. Perioperative antibiotics for preventing post-surgical site infections in solid organ transplant recipients. Cochrane Database of Systematic Reviews 2018; 12.
2. Chan S, Pascoe E, Clayton PA, Sypek MP, MacDonald SP, Lim WH, Francis RS, Isbel NM, Campbell SB, Hawley CM, Johnson DW. Infection-related mortality in Australia and New Zealand kidney transplant recipients. Clin J Am Soc Nephrol 2019; 14: 1484-92.
3. Chan S, Ng S, Chan HP, Pascoe EM, Playford EG, Wong G, Chapman JR, Lim WH, Francis RS, Isbel NM, Campbell SB, Hawley CM, Johnson DW. Perioperative antibiotics for preventing post-surgical site infections in solid organ transplant recipients (Review). Cochrane Database of Systematic Reviews 2020
4. Chan S, Isbel NM, Hawley CM, Campbell SB, Campbell KL, Morrison M, Francis RS, Playford EG, Johnson DW. Infectious complications following kidney transplantation – a focus on Hepatitis C infection, cytomegalovirus infection, and novel developments in the gut microbiota. Medicina (Kaunas) 2019; 55 pii E672.
5. Chan S, Hawley CM, Campbell KL, Morrison M, Campbell SB, Isbel NM, Francis RS, Playford EG, Johnson DW. Transplant associated infections – the role of the gastrointestinal microbiota and potential therapeutic options. Nephrology (Carlton) 2020; 25: 3-13.