



## RACP Foundation Research Awards

### FINAL REPORT

<b>Project / Program Title</b>	Decision Making in Kidney Transplantation	
<b>Name</b>	Dr Georgina Irish	
<b>Award Received</b>	2020 Jacquot Research Entry Scholarships	
<b>Report Date</b>	27/05/2021	
<b>Funding Period</b>	Start Date:	01/01/2020
	Finish Date:	01/01/2023

#### PROJECT SUMMARY

Kidney transplantation is a life-saving treatment for most people with end-stage kidney disease. For some people, however, it causes more harm than good. We will clarify which individuals will benefit from transplantation by personalising information on predicting potential outcomes after transplantation. We will use this to develop a decision tool to help doctors and patients make these challenging and irreversible decisions. This will maximise the benefits from this precious resource.

#### PROJECT AIMS / OBJECTIVES

**Aims:** Kidney transplantation is the best treatment for most patients with End Stage Kidney Disease (ESKD), offering greater patient survival and quality of life while being more cost effective than dialysis.(1-3) However, the degree of benefit derived from kidney transplantation can vary considerably between patients. This depends on the age, comorbidities and other characteristics of both the donor and recipient.(1) While it is true that most patients benefit from transplantation, some transplant recipients will have poor outcomes. It is therefore important to correctly identify the right patients to transplant, both on a personal level (to avoid poor individual outcomes), and on a population level (to maximise the benefit from a scarce resource). Unfortunately, doctors are currently limited in their ability to individualise risk calculations for specific patients. They can only describe prognosis using population level data, with limited ability to correct for individual patient factors.

This PhD aims to address this shortfall. Using epidemiological registry data, we seek to create more individualised projections of patient prognosis, to enable both patients and clinicians to make more informed shared decisions. Specifically, the project aims to:

- 1) Systematically examine current literature to identify and critically analyse existing decision-making tools for use by clinicians and patients in transplantation, to identify important gaps.
- 2) To identify which patients are most likely to benefit from transplantation by:
  - a) Quantifying the survival benefit of kidney transplantation compared with dialysis
  - b) Quantifying the survival benefit of accepting a specific transplant offer, compared with remaining on dialysis while awaiting another offer with better prognosis
- 3) Quantify the risk of ESKD in Australia/New Zealand following living kidney donation.
- 4) To this information to develop a suite of decision aids to assist potential kidney recipients, donors and clinicians to make individualised, evidence-based transplantation decisions.

## SIGNIFICANCE AND OUTCOMES

Decisions about kidney transplantation have significant impacts on both individual patients and the wider community. Therefore, it is vital that all parties have access to the most relevant and accurate information to inform their deliberations. My projects will improve this decision-making process by increasing the interpretation of individual patient risk. Furthermore, we will be able to translate this research into practice through the integration of the analyses into practical decision aids. This will ensure stakeholder involvement throughout to ensure these aids include the information that is most important to consumers. Our aim is to move from a “one size fits all” to a “bespoke” risk assessment, recognising the wide variability in both our donor and recipient cohorts. This work will harness the power of up-to-date registry data and place it at the fingertips of those who need it, supporting clinicians and consumers to make evidence-based decisions based on their individual profiles and preferences at the point of care. The primary goal of this PhD is to improve understanding and interpretation of the benefit-risk balance for individual patients, in order to personalise transplant allocation practices. This in turn will improve the distribution of a precious scarce resource so that we can maximise benefits for both individuals and the community. We anticipate this knowledge will directly influence kidney transplant policies and practices both nationally and internationally, by facilitating transition to more patient-centred, individualised healthcare.

## PUBLICATIONS / PRESENTATIONS

### PUBLICATIONS:

G. L Irish, P Hesselman, V Pedchenko, P Clayton, PT Coates. The Case | A 23-year-old male with hemoptysis. *Kidney International*. Volume 98, Issue 6, December 2020, Pages 1627-1628. doi:10.1016/j.kint.2020.07.050

G. L Irish, PT Coates, PA Clayton. Cancer post kidney transplant: the question of risk. *J Nephrol*. 2020 Dec;33(6):1129-1131. doi: 10.1007/s40620-020-00802-4

ICONA members, G Gambaro, G Piccoli. Nothing will ever be as before. Reflections on the COVID-19 epidemics by nephrologists in eleven countries. *Journal of Nephrology*. 2020 May. doi:10.1007/s40620-020-00756-7

G.L Irish. 60 breakthrough discoveries in nephrology: Kidney Transplantation (Accepted for Publication). *Kidney International*. 2020 Aug. Epub ahead of print (<https://www.theisn.org/60th-anniversary/breakthrough-discoveries>).

### PRESENTATIONS:

G L Irish, T Coates, P A Clayton. Does donor terminal, admission or best estimate glomerular filtration rate predict kidney transplantation outcomes?[oral]. TSAZN ASM Feb 2021

2020 G L Irish, T Coates, P A Clayton. Does donor terminal, admission or best estimate glomerular filtration rate predict kidney transplantation outcomes? [poster]. American Transplant Congress May 2020.

G L Irish, T Coates, P A Clayton. Does donor terminal, admission or best estimate glomerular filtration rate predict kidney transplantation outcomes? [poster]. TSANZ ASM, March 2020. Accepted for presentation (Cancelled due to COVID-19)

I have received a travel award from the Transplantation Society of Australia and New Zealand for this work in 2020.

I have presented my proposal at the BEAT-CKD local research meeting and the CNARTS Research meeting. I am due to present my PhD proposal at the 3 minute thesis competition in July, the BEAT-CKD national conference in August and at the Early Career Research BEATCKD national meeting on behalf of the Adelaide contingent in September.

### **ACKNOWLEDGEMENTS**

In all presentations and publications the RACP foundation and Jacquot award were acknowledged.