



## RACP Foundation Research Awards

### FINAL REPORT

<b>Project / Program Title</b>	Characterising the Impact of Epicardial, Abdominal, and Overall Adiposity on Atrial Fibrillation	
<b>Name</b>	Dr Christopher X. Wong	
<b>Award Received</b>	2017 The Robert Maple-Brown Research Establishment Fellowship	
<b>Report Date</b>	30 July 2018	
<b>Chief Investigator / Supervisor</b>	Prof Prashanthan Sanders	
<b>Administering Institution</b>	The University of Adelaide	
<b>Funding Period</b>	Start Date:	1 January 2017
	Finish Date:	1 January 2018

#### PROJECT SUMMARY

Atrial fibrillation is the most common heart rhythm disorder. It is associated with devastating complications, such as heart failure, stroke, and an increased risk of death. Obesity is increasingly recognised as a major risk factor for atrial fibrillation. This is important as the rate of obesity in society is burgeoning. Recent research by our group has highlighted the importance of body fat distribution. Specifically, the layer of fat surrounding the heart, termed epicardial fat, may be more important to the development of atrial fibrillation, as opposed to fat elsewhere in the body. This body of research aims to further investigate the role of obesity in atrial fibrillation and how we can use this information to better prevent and manage this common heart rhythm disorder.

#### PROJECT AIMS / OBJECTIVES

Our aim in this body of work is to better characterise the associations, mechanisms, and any potential therapeutic relevance of different forms of obesity on atrial fibrillation. We sought to achieve this via a program of epidemiologic, clinical, and translational study.

#### SIGNIFICANCE AND OUTCOMES

After hypertension, obesity is the second most impactful risk factor for atrial fibrillation (AF). Given the burgeoning epidemic of AF, a better understanding of increasingly influential and new approaches to combating this disorder are required. We have already demonstrated the importance of weight loss via lifestyle intervention in the management of AF, and this new paradigm shift has now been included in international guidelines. Our work on body fat

distribution and AF pathogenesis has resulted in international recognition in the form of invited reviews and talks. The support for this project has been crucial in advancing this important and impactful theme of work. For example, our epidemiologic component has already been published. This provides compelling and the best available overview of the data linking epicardial, abdominal, and overall adiposity with AF. Our clinical and translational component is also progressing rapidly. Preliminary data on epicardial fat burden in Indigenous Australians, a population in which we have previously described a significant prevalence of AF, is finalised and in the journal submission process. This body of work has also led to the development of a trial proposal for pharmacological weight loss, and the effect this has on body fat distribution and AF outcomes; this is under ethics review and awaiting the outcome of funding applications.

### **PUBLICATIONS / PRESENTATIONS**

The following outputs relate to this program of work and were supported by this Fellowship:

Epicardial Adipose Tissue in Indigenous and Non-Indigenous Australians: Implications for Cardiometabolic Diseases (in submission)

Wong CX et al. Associations of Epicardial, Abdominal and Overall Adiposity with Atrial Fibrillation. *Circulation Arrhythmia and Electrophysiology*

Wong CX et al. Epidemiology of Atrial Fibrillation: The Australian and Asia-Pacific Perspective. *Heart, Lung and Circulation*

Pathak RK et al. Cost-Effectiveness and Clinical Effectiveness of the Risk Factor Management Clinic in Atrial Fibrillation: the CENT Study. *JACC Clinical Electrophysiology*