Improving management of cardiovascular disease in Indigenous Australians

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In this podcast, James Edwards chats with Christopher Wong about the management of cardiovascular disease in Indigenous Australians in remote Northern Territory, including the findings from his Doctor In Training Research Scholarship Project.

Summary Writer: Alice Sun

Script Writer: Sophie Oen

Editor: Christopher Wong

Interviewer: James Edwards

Interviewee: Christopher Wong

About Dr Christopher Wong

Dr Christopher X. Wong is an academic cardiologist with broad clinical and research interests in cardiovascular medicine.

Whilst studying medicine at the University of Adelaide, during which he held multiple leadership roles and was elected to the University Council, he was named a Rhodes Scholar. He read for Master’s degrees in clinical trials, epidemiology and population health at the University of Oxford, and subsequently completed a PhD in cardiovascular medicine. Christopher was recently awarded a Fulbright Scholarship to undertake further study and training in the United States at Harvard University and the University of California San Francisco.

Christopher’s clinical training in internal medicine and cardiology was undertaken at the Royal Adelaide Hospital. He has also spent time training at the John Radcliffe and Churchill Hospitals in Oxford. In addition to a high volume of inpatient and outpatient consulting, he has wide experience in echocardiography (including transoesophageal and stress echocardiography), cardiac CT, cardiac MRI, and cardiac catheterisation. He is currently undertaking further subspecialty training in cardiac electrophysiology and pacing at the Royal Adelaide Hospital. He is a Fellow of the Royal Australasian College of Physicians (FRACP), the American College of Cardiology (FACC), and the European Society of Cardiology (FESC), and an internationally recognised Certified Cardiac Device Specialist (CCDS).

Christopher’s research interests focus on the mechanisms, clinical treatment and public health implications of cardiovascular disease, particularly heart rhythm disorders. He has published over 70 journal articles in major general medical (Archives of Internal Medicine, British Medical Journal), cardiovascular (Circulation, Journal of the American College of Cardiology, European Heart Journal) and subspecialty journals (Heart Rhythm, JACC Clinical Electrophysiology, Circulation Arrhythmia and
Electrophysiology). Furthermore, his research is presented regularly at international and national meetings, resulting in over 150 conference abstract proceedings.

He has held multiple Category 1 scholarships, fellowships and grants totalling over AUD 2 million dollars in funding. He reviews regularly for over 40 international journals, and sits on multiple national and international grant-funding committees, such as those of the National Health and Medical Research Council of Australia. He has also been an invited faculty member at the leading international (Heart Rhythm Society Annual Scientific Sessions) and Asia-Pacific (Asia Pacific Heart Rhythm Society Annual Scientific Sessions) heart rhythm conferences.

He is an Associate Editor and on the Editorial board for BMC Cardiovascular Disorders and European Heart Journal Case Reports. He is also an invited guideline committee member, most recently drafting guideline recommendations for the international Kidney Disease Improving Global Outcomes (KDIGO) group. He is actively involved in supervising research students totalling two PhD students (one awarded Dean’s Commendation), two Master’s students, 3 Honours students, and 22 postgraduate students, and 13 undergraduate students, many of whom have won prizes for their works. He has also been recognised with awards for teaching of medical students.

He is currently a Consultant Cardiologist at the Cardiovascular Centre in Norwood, Adelaide, an Electrophysiology and Pacing Fellow at the Royal Adelaide Hospital, and a Senior Lecturer at the University of Adelaide, the latter supported by a National Heart Foundation of Australia Post-Doctoral Fellowship and a Hospital Research Foundation Mid-Career Fellowship.

Improving cardiovascular health in remote communities

With Dr Chris Wong, Cardiologist at Cardiovascular Centre, Norwood, and Electrophysiology Pacing Fellow at Royal Adelaide Hospital, South Australia

Introduction
Cardiovascular disease is a leading cause of preventable mortality and morbidity in Indigenous Australians. Although age-standardised cardiovascular disease mortality has fallen over the past few decades, it still accounts for a quarter of Australian and Torres Strait Islander death overall. On average, cardiovascular events and related mortality occur around 10-20 years earlier than in non-Indigenous Australians.

In this podcast, we discuss the management of cardiovascular disease in Indigenous Australians in remote Northern Territory with cardiologist Dr Chris Wong, including the findings from his research project.

1. Research Project

- **Aim:** To explore the burden of Atrial Fibrillation (AF) in Indigenous Australians
- **Background:** based in Alice Springs, Northern Territory, where there is a significant Indigenous community
Method: Retrospective study using routine databases over 10 years of patients diagnosed with AF managed at Alice Springs Hospital (the only tertiary hospital in central Australia)

Secondary themes: new investigations for cardiovascular disease, and linking cardiac care with tertiary center

In conclusion, atrial fibrillation was found to occur at a much younger age (approximately 30-40 years olds) and more prevalent in the indigenous than in the general population. Indigenous Australians were also less likely to have treatment for their Atrial Fibrillation

2. Risk factors identified in Indigenous Australians contributing to Atrial Fibrillation

- Hypertension
- Obesity
- Rheumatic Heart Disease
- Diabetes

When the data was analysed in a multivariable model and adjusted for the comorbidities with race, the result demonstrated that the high burden of these risk factors was leading to Atrial Fibrillation in Indigenous Australians.

3. How do the findings of this research affect future management?

- Addressing appropriate anticoagulation in this population
  - The study found that a high rate of patients with CHADVAS ≥ 2 were not on anticoagulation
  - The study also found a proportion of patients who were on anticoagulation with a CHADVAS of 0
  - Changes which were suggested: practice change, for example electronic decision-making supports

- Better investigation of underlying risk factors particularly coronary artery disease
  - Optimising risk factors including hypertension and diabetes
  - Increased accessibility in remote areas to investigations for coronary artery disease including exercise stress tests and CT - coronary angiography

4. Interesting facts about Atrial Fibrillation
More common than initially presumed, affecting roughly in one in four people, due to the fact that it is often paroxysmal. Often triggered by ectopic beats in the pulmonary vein which can be addressed by Atrial Fibrillation ablation. Risk factors such as diabetes, hypertension lead to scarring/fibrosis of the atriums and thus managing the risk factors will reduce the risk of developing atrial fibrillation.

### 5. Take home messages on Atrial Fibrillation

- Atrial Fibrillation often contributes to heart failure and left ventricular dysfunction, more so than thought in the past.
- Rhythm control, particularly with Atrial Fibrillation ablation, improves mortality in patients.
- Thus, we should be trying to revert patients to sinus rhythm particularly in patients with left ventricular dysfunction.

### 6. Tips for submitting successful research proposals and publications

- Have a good question which is worthwhile answering, as well as achievable and feasible.
- Consider additional help/expertise, datasets, investigations and analytical tools.
- For a research proposal, emphasise how the research will change clinical practice and improve wellbeing of patients.

### References


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Related Blogs

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