



RACP Foundation Research Awards

YEAR 1 PROGRESS REPORT

Project / Program Title	Primary Aldosteronism: Prevalence, Clinical Features, and Biomarkers	
Name	Dr Renata Libianto	
Award Received	2019 RACP NHMRC Kincaid-Smith Scholarship	
Report Date	24 February 2020	
Chief Investigator / Supervisor	Professor Peter Fuller	
Administering Institution	Hudson Institute of Medical Research	
Funding Period	Start Date:	4 February 2019
	Finish Date:	7 February 2021

PROJECT SUMMARY

Hypertension affects over 6 million Australians and is a leading risk factor for heart attack and stroke. Most people with hypertension have "essential hypertension" (i.e. they have no reversible cause), but a proportion have a treatable secondary cause of which the most common is primary aldosteronism (PA). PA is caused by excessive production of aldosterone, a hormone responsible for controlling blood pressure and which have adverse effects on the heart if produced in excess. If diagnosed in a timely manner, PA can be treated effectively with either surgery or with medication which blocks aldosterone action. Unfortunately, the current detection rate of PA in the community is low. Barriers include uncertainties regarding how common it actually is, and the lack of clinical features to differentiate it from essential hypertension and prompt screening. This project, therefore, aims to establish the prevalence of PA in primary care; and to identify early clinical features and cellular markers that may help distinguish PA from essential hypertension. The results from this study will further our understanding of PA, and may lead to a greater emphasis on the importance of PA in the management of hypertension.

PROJECT AIMS / OBJECTIVES

1. To establish the prevalence of PA in treatment-naïve hypertensive patients in primary care;
2. To evaluate 24hour ambulatory blood pressure and other clinical features which may distinguish PA from other forms of hypertension; and
3. To identify unique transcriptomic markers of aldosterone excess in peripheral blood monocytes.

SIGNIFICANCE AND OUTCOMES

This study will determine the prevalence of PA in patients with newly diagnosed hypertension in the primary care setting. If the results confirm the postulated prevalence of 5-10%, then this will have a major impact on the management of hypertension both in Australia and internationally as it will clearly demonstrate that PA is much more common than prevailing attitudes would suggest. This will provoke a major revision of the guidelines on management of hypertension in Australia. It also paves the way for economic modelling of the cost-effectiveness of PA screening to make the case for routine screening at diagnosis. Furthermore, this study will investigate clinical characteristics of early PA and identify transcriptomic biomarkers in monocytes which may aid in the diagnosis of PA and improve our understanding of its pathophysiology. Findings from this research will influence the management of hypertension and optimise the health care of a significant portion of the hypertensive population.

PUBLICATIONS / PRESENTATIONS

Abstracts:

R Libianto, M Young, J Shen, G Russell, M Stowasser, SM Gwini, P Nuttal, PJ Fuller, J Yang. "Screening for Primary Aldosteronism – an Opportunity for Optimal Hypertension Management in Primary Care." Presented at the Asian-Pacific Congress of Hypertension (Brisbane, 2019) and the Endocrine Society of Australia Annual Scientific Meeting (Sydney, 2019).

YY Lim, **R Libianto**, J Shen, PJ Fuller, M Young, J Yang. "A Dedicated Endocrine Hypertension Service Increases the Timely Diagnosis of Primary Aldosteronism." Will be presented at the US Endocrine Society Conference (San Francisco, 2020).

Publication:

R Libianto, PJ Fuller, M Young, J Yang. "Primary aldosteronism is a public health issue: challenges and opportunities". Accepted (subject to minor revision) by the Journal of Human Hypertension (2020).

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R Libianto, PJ Fuller, M Young, J Yang. "Primary aldosteronism is a public health issue: challenges and opportunities". Accepted (subject to minor revision) by the Journal of Human Hypertension (2020).