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RACP Foundation Research Awards

YEAR 1 PROGRESS REPORT

Project / Program Title		Determining the prevalence of diseases other than tuberculosis in patients beginning treatment for smear-negative tuberculosis
Name		Dr Michael J Maze
Award Received		2019 RACP Research Establishment Fellowship
Report Date		7 April 2020
Chief Investigator / Supervisor		Dr Michael J Maze
Administering Institution		University of Otago
Funding Period	Start Date:	1 March 2019
	Finish Date:	28 February 2021

PROJECT SUMMARY

Tuberculosis (TB) is considered one of the leading causes of death in low and middle income countries, such as Tanzania. Due to inaccurate diagnostic tests, over half of people who are treated for TB in Tanzania are treated without a proven diagnosis. We think that many patients diagnosed with TB in fact have a disease other than TB. If correct, this has major implications for individual patients and global TB control. Our pilot study will investigate how commonly TB is being over diagnosed in Tanzania, and which diseases are most commonly overlooked. We will recruit patients diagnosed with TB without microbiological proof at two tertiary urban hospitals in Moshi, Tanzania. We will perform a thorough set of investigations to determine if TB is present, and to identify a range of possible alternative diagnoses. Our long term goal is to improve diagnostic and treatment algorithms available to health-care workers in low resource settings when they are faced with patients with a chronic cough and symptoms suggestive of tuberculosis.

PROJECT AIMS / OBJECTIVES

AIM

We aim to investigate intensively a consecutive sample of patients who have been diagnosed with smear-negative tuberculosis in order to determine the prevalence of culture-positive tuberculosis and the prevalence of other respiratory diseases that might cause a similar clinical picture.

OBJECTIVES

1. To estimate the prevalence of culture-positive tuberculosis
2. To estimate the prevalence of chronic suppurative bacterial infection (bronchiectasis and bacterial lung abscess), pulmonary nocardiasis, chronic fungal infection (cryptococcosis,

histoplasmosis, and aspergillosis), and non-infective lung disease (interstitial lung disease including pneumoconiosis, and lung cancer).

SIGNIFICANCE AND OUTCOMES

We have identified that despite use of GeneXpert MTB-RIF in the Tanzanian TB control programme, 42% of all patients beginning TB treatment do so without bacterial confirmation, and a high proportion of these patients do not appear to have TB. Our further work to identify the cause of symptoms among these patients is ongoing.

Our results suggest current TB diagnostic algorithms in low- and middle-income countries are inaccurate and result in substantial over-diagnosis. Our study should provide preliminary data on alternative diagnoses that should be considered in future diagnostic algorithms.

PUBLICATIONS / PRESENTATIONS

The time frame of academic outputs, and community and health system feedback is dependent on the duration of disruption from COVID-19. Once shipments can be resumed without fear of delay that might impair sample integrity we expect to complete academic outputs within 6 months.