



2016/2017 Grant Recipient
Dr Ferial Azibani



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Department of Medicine
Hatter Institute for
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in Africa**

RESEARCH TOPIC:

**Cardiac fibrosis in Peripartum Cardiomyopathy:
physiopathology and novel biomarkers.**

RESEARCH PROPOSAL ABSTRACT

Cardiac disease is emerging as an important contributor to maternal deaths in both lower-to-middle and higher income countries. Over the last decade there has been a steady increase in the overall institutional maternal mortality rate in South Africa. Peripartum Cardiomyopathy (PPCM) is a rare disorder, characterized by an onset of heart failure with unknown etiology, in women during the last month of pregnancy, during delivery or within five months postpartum. PPCM is an important health concern and has recently been highlighted as the leading cause of cardiac mortality in maternity, according to data collected via the South African National Confidential Enquiry into Maternal Deaths. The pathophysiology of PPCM remains unclear. Experimental and clinical studies have identified oxidative stress, impaired angiogenesis and an increase in immune and inflammatory reactions in the initiation and development of the disease. Cardiac fibrosis has been proposed to play an important role in the genesis and progression of many types of heart failure. The importance of fibrosis and the use of fibrosis related biomarkers to diagnose and understand risk stratification of PPCM patients have never been explored. By means of experimental and clinical studies we aim to explore the underlying mechanisms of fibrosis and its indications in the pathophysiology of PPCM. Furthermore, by improving diagnostic tools such as imaging techniques (Cardiac Magnetic Resonance) and blood tests (fibrosis related biomarkers), our ultimate aim is to improve quality of care, optimize treatment strategies and reduce maternal death due to PPCM. All PPCM patients will be recruited from the dedicated, ongoing, weekly 'Cardiac Disease and Maternity Clinic' at E17, Grootte Schuur Hospital (GSH). All patients will be assessed by Prof Karen Sliwa (a cardiologist with expertise in women with heart disease in pregnancy) and Prof. John Anthony (Head of Obstetrics, GSH. His specific role is the clinical care of the obstetric patients). All the animal experiments will be carried out at our research institute. The applicant Dr. Azibani (a post-doctoral fellow, supervised by Prof. Sliwa) will share her expertise in cardiac remodeling and biomarkers. She will be mainly involved in all project sections and aspects.