Media release
Friday 28 August 2020

FECRI researchers look at Breast cancer in pregnancy

- *Researchers at the Fiona Elsey Cancer Research Institute have* published results examining the aggressive subtype triple-negative breast cancer.
- *The Breast cancer research group commenced work at the Institute in March following a private philanthropic seed funding donation and February's Ballarat Cycle Classic that raised a record $300,000.*
- *Breast cancer is one of the most common cancers in women with 20,000 new cases diagnosed in Australia each year. It is the second most common cause of cancer related deaths in women with over 3,100 deaths per year.*
- *"Aberrant Pregnancy-Associated Plasma Protein-A expression in breast cancers prognosticates clinical outcomes"* **Prashanth Prithviraj**, Matthew Anaka, Erik W. Thompson, **Revati Sharma**, Marzena Walkiewicz, Candani S. A. Tutuka, Andreas Behren, **George Kannourakis**, and **Aparna Jayachandran.**
  Journal: Scientific Reports: August 2020

Fiona Elsey Cancer Research Institute's new Breast cancer research group has published results examining the aggressive subtype triple-negative breast cancer.

Breast cancer is the second most common malignancy encountered in women of childbearing age. Triple-negative breast cancers account for 10%–20% of breast cancers and have been reported to be more aggressive and associated with poorer survival than other subtypes of breast cancers. Notably, the triple-negative subtype of breast cancer is encountered more often in pregnancy and has an aggressive clinical course.

This is the first work in the field describing the behaviour and function of a pregnancy associated plasma protein (PAPPA), that is highly found in aggressive triple-negative breast cancers. High PAPPA concentrations are generally detected in blood of pregnant women. However, in breast cancer patients, researchers found that an abnormal overexpression of PAPPA negatively affects survival rates and increases the risk of the cancer recurring. The research sought to understand its functional consequences, and findings revealed that PAPPA plays an important role in regulating key cell motility networks in breast cancers.

This research has been recently recognised and published in international medical journal, *Scientific Reports*.

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This is the first publication for the Institute's new Breast cancer research group lead by, Dr Aparna Jayachandran, whose work will focus on the immunology of breast cancer with special reference to high risk triple negative breast cancer.

The research has been undertaken by Dr Aparna Jayachandran, along Honorary Research Fellow and Oncologist, Dr Prashanth Prithviraj, Professor George Kannourakis and Federation University PhD candidate Revati Sharma. The group collaborated with groups from the Olivia Newton-John Cancer Research Institute, University of Melbourne, University of Alberta, Queensland University of Technology, Translational Research Institute and La Trobe University.

Dr Jayachandran joined the Ballarat based team in March, with her most recent appointment as the Head of the Liver Cancer Unit at the Gallipoli Medical Research Institute at the University of Queensland.

Dr Aparna Jayachandran said "I am extremely delighted to share our first publication of results from our work. We have an outstanding group of cancer researchers and oncologists."

"This research has provided evidence that could lead to a potential therapeutic target for the subset of breast cancers with elevated levels of the plasma protein that will improve treatment outcomes for these patients." Said Dr Jayachandran

Institute Director, Professor George Kannourakis said "We are so pleased to see these first results from this talented team. The Institute is well placed to do this research and it is an expansion to the ground-breaking work that the team here at the Institute is doing into the immunology of cancer. We look forward to developing this project and potential therapeutic targets that can assist in patient outcome." Said Professor Kannourakis.

This research on PAPPA has led to understanding a plausible mechanism for accelerated cancer progression during pregnancy. A population-based study to support clinical and decision making in treating cancer during pregnancy is currently underway at the Institute.

FECRI currently has 8 PhD students from Federation University and 13 senior scientific staff. The program is community funded and the only cancer research Institute in regional Australia. Other key projects being conducted at the Institute are:

- Ovarian cancer
- Bowel cancer
- Immunology
- Langerhans cell histiocytosis
- Chronic Lymphocytic Leukaemia
- Renal cancer

The establishment of the Breast cancer project was made possible because of seed funding from a private philanthropic donation in late 2019 and this February's Ballarat Cycle Classic that raised a record $300,000 for the project.

Photo opportunity

Professor George Kannourakis, Dr Aparna Jayachandran and Dr Prashanth Prithviraj will be available on Friday 28 August for interviews and further information regarding this work.

Date: Friday 28 August
Time: From 2pm (All media to confirm a time)
Where: Fiona Elsey Cancer Research Institute

File photos are available from the Institute on request.

All media enquiries, please contact Sarah Stapleton- Marketing and Fundraising Manager at FECRI on 0475 383 687 or sarah@fecri.org.au.

Please tag the Institute on all social media using @fionaelseycri