



Research We Fund



Project:

Eliminating leukemic cells from ovarian tissue for safe restoration of fertility

Research team:

Dr Debra Gook,
A/Prof David Westerman

Institution: University of Melbourne

Cancer type: Leukaemia

Years funded: 2020-2022

What is the project?

Women often lose fertility due to cancer treatment. Pieces of ovary can be frozen before treatment in the hopes of restoring fertility later, but for children and adolescent young adults with leukaemia this is not possible as the ovary cells could bring the disease back. We aim to determine the risk of recurrent cancer after transplantation and develop techniques to purify the ovarian tissue. We will also construct an artificial ovary to transplant in a way that would safely restore fertility.

What is the need?

Leukaemia comprises one-third of childhood cancers and 80% of those diagnosed are at risk of fertility loss after a bone marrow transplant. Due to the age and treatment urgency of these patients, egg collection and storage is not possible, leaving freezing ovarian tissue as the only option. Currently there is no safe procedure to restore fertility when these

patients reach adulthood, making this option seem futile to many young leukaemia patients. By discovering how to eliminate leukemic cells from ovarian tissue and construct an artificial ovary that can be grafted back to women we hope to resolve this issue and reduce disparities in care for children and adolescent young adults with leukaemia.

What are you trying to achieve?

This project will provide an estimate of the contamination of leukaemia within ovarian tissue and the potential risk associated. We will test methods to remove this contamination and produce an artificial ovary free of leukaemia cells that could be used to restore fertility. Our patients and medical practitioners will then be asked how acceptable this would be for treatment.

Project timeline

Timeline	2020	2021	2022
Determine risk of contamination within stored ovarian tissue and eliminate cells in-vitro			
Eliminate leukaemia cells in-vitro; isolate individual follicles free of contaminating leukaemia cells			
Create an artificial ovary; survey patients and medical professionals regarding acceptance of the treatment			

“ We hope to reduce disparities in care for children and adolescent young adults with leukaemia. ”

