MEDIA RELEASE

World first imaging trial aims to improve treatment outcomes for brain cancer

A new experimental imaging approach using FET-PET scans aims to achieve more accurate assessments and improve treatment outcomes for patients with Glioblastoma.

Glioblastoma is the most common primary brain cancer in adults representing approximately 50 per cent of brain tumours. Currently, standard treatment involves brain surgery followed by chemo-radiation and then further chemotherapy.

TROG Cancer Research is currently coordinating the world's largest multi-site prospective trial of up to 210 people with newly diagnosed Glioblastoma involving FET-PET imaging over their course of treatment.

The aim of this study, known as the FIG trial, is to evaluate the PET imaging agent FET* to definitively establish the role of FET-PET in the management of Glioblastoma.

The FIG trial is Co-Chaired by Professor Andrew Scott AM, from the Department of Molecular Imaging and therapy, Austin Health and the Olivia Newton-John Cancer Research Institute and Associate Professor Eng-Siew Koh, Radiation Oncologist from Liverpool Hospital, University of New South Wales. Professor Scott said the FIG trial was a major undertaking that required sophisticated new methods for analysis of imaging information as well as matching tumour and blood specimens to patient outcomes.

"Imaging plays a key role in diagnosis, radiotherapy planning, and monitoring of the treatment response in Glioblastoma and the current standard of care with respect to imaging is MRI scans," Professor Scott said.

"An alternate form of imaging has been developed using Positron Emission Tomography (PET), where tumours can be imaged by utilising a newer radiotracer (FET), which detects whether brain cancer cells are active.

"It is hoped that this new imaging approach with FET-PET scans will lead to more accurate assessment, enhance the accuracy of radiation therapy planning as well as improve both treatment decisions and outcomes for patients with Glioblastoma."

The trial is currently underway at 10 sites across the VIC, NSW, ACT, QLD, SA, and WA, with participants receiving standard of care radiotherapy with Temozolomide-based chemotherapy. The additional FET-PET scans will follow chemo-radiation treatment and at the time of subsequent suspected progression of disease.

Up to 140 patients will undergo an initial post-surgery and pre-chemo-radiation therapy FET-PET scan (FET-PET 1) and up to 140 patients will undergo post treatment FET-PET scans for the assessment of relapse versus pseudo-progression (FET-PET 2 performed at one month post chemo-radiation and FET-PET 3 when tumour activity is suspected clinically and/or using MRI scans).

Participants will be asked to complete quality of life questionnaires in their clinical assessment at four weeks, then three, six and 12 months after the completion of chemo-radiation and at the time that the FET-PET3 scan is done.

"The primary objectives of this trial are to determine if this novel imaging approach using FET-PET imaging can provide additional information for radiation treatment planning in patients with newly diagnosed Glioblastoma, and whether

FET-PET imaging can accurately distinguish treatment-related changes from tumour progression after initial treatment It will also assist with determining if the treatment has been successful," Professor Scott said.

"The techniques for performing this analysis have not routinely been available, so we've had to develop novel methods and protocols for all elements of the study. We've also had to implement detailed credentialling and quality assurance programs at all Australian study sites, the scope and scale of which has never been done before.

"It's a significant undertaking that is bringing all the major neuro-oncology groups around Australia together on this project, with TROG Cancer Research taking on the important coordinating role."

TROG Cancer Research CEO, Susan Goode said the FIG trial was an important exploration of new ways of treating such a devastating disease.

"Around 1,900 Australians develop brain cancer every year. Over the last 30 years, the number of people surviving other types of cancers has steadily improved but the survival rate for brain cancer has unfortunately remained very low, at around 22 per cent," Susan said.

"The world of radiation therapy is rapidly evolving with new technologies and treatments being developed both nationally and internationally.

"It's vital that comprehensive world-class research and studies such as the FIG trial investigate and test new ways to improve outcomes and quality of life for people affected by brain cancer."

The trial is expected to conclude by mid-2023. In addition to funding from the Medical Research Future Fund and the Australian Brain Cancer Mission, funding has also been provided by Cure Brain Cancer Foundation for this trial.

*O-(2-[18F]-fluoroethyl) L-tyrosine

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IMAGE | Nicole Zientara (radiation therapist), Steven Jameson (FiG trial participant), A/Prof Eng-Siew Koh (FiG Trial Co-Chair)

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About TROG Cancer Research

TROG (the Trans-Tasman Radiation Oncology Group) is a global leader in cancer research and has been successfully improving the outcomes of cancer patients since 1989.

Our mission is to improve treatments and quality of life for cancer patients, and we do so by working collaboratively. We are one of the largest clinical trial groups in Australia and New Zealand and we work with hospitals, universities, cancer centres and the wider community around the world to conduct life-changing research.

TROG Cancer Research's focus is providing hope to people with all cancer types through one treatment, radiation therapy.

Our research findings have helped advance the way many cancers are treated worldwide.