Conventional imaging (CT and bone scan) and PET/CT scan are more accurate imaging techniques that allow for better and earlier decisions around men’s clinical management.

At the time of diagnosis, 1 IN 3 men’s cancer has already spread beyond the prostate bed and will require more intense treatment.

After initial treatment, 1 IN 4 men’s cancer returns within 10 years of initial treatment. Earlier detection means men can be offered additional treatment to prevent the disease from progressing further.

Positron Emission Tomography (PET) imaging reveals precious information on both the activity and location of cancerous cells. Very small amounts of radioactive tracer bind to the targeted cells and light up, even when the cells are too small to detect via conventional scanning methods.

Since 2013, Movember has committed almost $5M to the GAP 2 initiative and led to notable outcomes:

- 7 Publications in highly regarded scientific journals
- $22.3 M in leverage funding
- Contributed to the original research on the 2 FDA approved PET imaging tracer, with 1 more approval expected in 2021
RADIOTRACERS BEING STUDIED

PET imaging radiotracers are made up of two components: a radioactive isotope (commonly $^{11}$C, $^{18}$F or $^{68}$Ga), and a ligand that binds to targeted molecules on cancer cells.

- **Choline**
  - is absorbed more in prostate cancer cells than in healthy cells, leading to increased level of Choline.

- **PSMA** (Prostate Specific Membrane Antigen)
  - is a molecule found abundantly on the surface of prostate cancer cells.

- **FDHT**
  - is a derivative of testosterone. It binds to increased level of androgen receptors on prostate cancer cells.

- **Fluciclovine**
  - is a synthetic amino-acid preferentially taken up by prostate cancer cells.

Since 2013, Movember has committed almost $5M to the GAP 2 initiative and led to notable outcomes:

- **$^{11}$C-CHOLINE VS $^{68}$Ga-PSMA COMPARATIVE STUDY**
- **$^{18}$F-DCFPyL RADIOTRACER DEVELOPMENT**
- **$^{18}$F-PSMA VS $^{18}$F-FDHT COMPARATIVE STUDY**
- **$^{18}$F-FLUCICLOVINE RADIOTRACER DEVELOPMENT**

Research Translation Pathway

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Academic investigation
PROJECT #2

The team worked on the initial development of \(^{18}\)F-DCFPyL radiotracer, which was successfully licensed to Progenic Pharmaceuticals for subsequent development and commercialisation.

It has been studied in two large clinical trials - OSPREY and CONDOR - and was shown to accurately detect prostate cancer tumours both at initial diagnostic as well as disease recurrence.

Based on the positive outcomes from both clinical trials, this radiotracer is expected to receive FDA approval in 2021.

PROJECT #3

Leveraging the original GAP2 dataset in \(^{18}\)F-FDHT, the team received a Challenge Award in 2019 from the Prostate Cancer Foundation to transform this project into a comparative study between \(^{18}\)F-FDHT and \(^{18}\)F-PSMA.

As the only active project within GAP2, this project will compare the prognostic value of these two radiotracers in men with advanced prostate cancer treated with androgen receptor-directed therapy.

PROJECT #4

The research team worked on the initial development of this radiotracer. It was then passed onto Blue Earth Diagnostic early on for subsequent development and commercialisation.

Also known as Axumin®, it became the first PET imaging radiotracer approved by the FDA in 2016 to detect prostate cancer in men with elevated level of PSA after initial treatment.

THANK YOU

The GAP 2 program was funded thanks to the generosity of the Movember community.

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