Cancer Research Core (CCR)

Study Title: CCR 3926 INSIGHT (Functional Imaging in Radical Chemo-radiotherapy for Head & Neck Cancer)

CI and Sponsor names: Dr. Kate Newbold
RM Sponsored

Study opening date: 10/07/2013
Study closing date: 31/08/2016

Proposal and Objectives:
Patients with locally advanced head and neck cancer have a higher chance of disease recurrence and a poor overall survival rate of 30-40%. One of the ways to improve these figures has been to treat patients more aggressively with higher doses of radiotherapy or the addition of drugs such as chemotherapy. However, head and neck cancer represents a spectrum of diseases with some patients more likely to respond than others. If we are able to predict treatment response early enough within their treatment, the patient’s subsequent treatment can be altered if needed.

Functional imaging measures biological characteristics of tumours. Studies have shown that changes in these biological characteristics appear earlier than anatomical changes (i.e. size and shape). Biological characteristics such as how active the tumour is (PET-CT) and how tightly packed the tumours cells are (DWI-MR) are can be measured.

To use functional imaging early during treatment to predict the response to treatment.

Main Findings:

- In the group of patients who received chemotherapy prior to a combination of chemotherapy and radiotherapy, the INSIGHT trial found that:
  - A PET-CT scan performed after the first week of chemotherapy was able to predict treatment response. Patients whose cancer showed a greater fall in activity after the first cycle of chemotherapy, were more likely to respond to their treatment.

- In the group of patients who received a combination of chemotherapy and radiotherapy only, the INSIGHT trial found that:
  - A PET-CT scan performed after the first week of treatment predicted which patients would respond to their treatment
  - MRI scans performed after the second week of treatment
predicted which patients would respond to their treatment.

| Implications for practice/future research: | The INSIGHT study showed that performing PET-CT or MRI scans early during treatment can predict the patient’s treatment response. This information can be obtained at an early enough stage for the treatment to be tailored subsequently. For example, within the first 2 weeks of treatment, we can detect patients who are at higher risk of not responding and their treatment can be changed to a more aggressive form for the remaining treatment. |
| Dissemination Plan: | Publication in journals  
Wong, K. H. et al. (2016) ‘The Predictive Value of Early Assessment After 1 Cycle of Induction Chemotherapy with 18F-FDG PET/CT and Diffusion-Weighted MRI for Response to Radical Chemoradiotherapy in Head and Neck |