The ROYAL MARSDEN
NHS Foundation Trust

Lay summary for completed research projects

CCR No and Study Title:	CCR3805 Lymphocyte apoptosis and risk of chronic adverse effects in patients undergoing radical radiotherapy for breast and prostate cancers (FAST/CHHiP)		
CI and Sponsor names:	John Yarnold, Professor of Clinical Oncology The Institute of Cancer Research		
Study opening date:	2 July 2012	Study closing date:	30 June 2016
Proposal and Objectives:	Proposal: We know that some patients react much more strongly than others to the same radiotherapy dose. A few patients develop troublesome long-term symptoms, whereas others experience no side-effects at all; most people are somewhere between. Previous work by us and other research groups suggest that when blood cells (called lymphocytes) are grown in the laboratory, the cells respond to radiotherapy in a similar way to the person's tissues after radiotherapy. In this study we aimed to validate tests that had been shown to identify patients who are very sensitive to radiotherapy and those who are not. If a connection between the responses of a person's cells in the laboratory and of their own tissues could be confirmed, it might allow us to conduct simple tests before treatment to identify individuals who are more likely to react strongly to treatment. This information would help us choose the most appropriate radiotherapy dose or recommend an alternative treatment. Objective: The purpose of this study was to validate tests aimed at establishing a patient's radiosensitivity, so that radiotherapy dose can be better adjusted to the individual. 400 people who took part in the FAST and CHHiP Trials at the time of their radiotherapy for cancer were invited to take part in this study, and each provided blood samples. One sample from each participant was couriered to Montpelier, France, and another to Oxford, UK, where laboratories undertook tests on the still-living lymphocytes (immune cells).		
Main Findings:	The so-called apoptosis test, developed by colleagues in France, performed reasonably well in identifying patients who are at low risk of developing adverse effects after radiotherapy, whereas the chromosome tests undertaken by colleagues in Oxford, failed to do so.		

Implications for practice/future research:	French colleagues have established a facility/company that will offer this test to French radiotherapy patients. Other countries, including UK, consider this premature
Dissemination Plan:	The results are being prepared for publication by the end of this year