

Prostate cancer patients go 'behind the scenes' in research

August 28 2015

Researchers in the biomedical proteomics group in UCD will host an All-Ireland Cooperative Oncology Research Group (ICORG) patient open event with colleagues in St Luke's Institute of Cancer Research on Friday, 28 August 2015.

Prostate cancer [patients](#) who support the research efforts of clinicians at St Luke's Hospital, Rathgar and scientists in UCD Conway Institute will have an opportunity to take a look at the research laboratories and hear first-hand of the progress so far in research projects.

The patients are receiving treatment for prostate cancer at St. Luke's Hospital and have regularly donated blood and urine samples - some since 2006 – as part of two ongoing non-interventional clinical trials established by Professor John Armstrong through ICORG.

Prostate cancer patients treated with combined hormone and radiation therapy (CHRT) have better disease-specific survival outcomes than patients treated with hormonal therapy alone. However, a significant number of CHRT patients still succumb to recurrent disease.

Since 2006, Professor Armstrong and Professor Steve Pennington at UCD Conway Institute, have been trying to use proteomics to identify a new panel of serum proteins that could flag disease recurrence. The continued collection of patients samples gives this team the rare ability to assess the changing expression of potential biomarkers over a long period of time.

The first published proteomic analysis undertaken by PhD student, Brian Morrissey compared serum proteins in a prostate cancer patient who experienced disease recurrence after with proteins in a patient who remained disease free.

More recently, PhD student Claire Tonry and MSc student Noel Fitzgerald progressed this initial research in a second proteomic study on patients who failed treatment and time-matched patients who have yet to show evidence of treatment failure. The team identified and measured a subset of potential protein candidate biomarkers in patient serum samples spanning baseline to time of treatment failure and beyond. Importantly, the data highlighted the challenges associated with longitudinal measurements of protein biomarkers.

These protein biomarker measurements take place in a dedicated biomarker validation laboratory established by Professor Pennington and his biomedical proteomics group. The lab is supported by an on-going collaboration with Agilent Technologies, a company that makes mass spectrometers used for protein measurements.

Professor Pennington, UCD School of Medicine said, "We are very much looking forward to the opportunity to engage with and thank these individuals who have supported our ongoing prostate cancer research efforts throughout what is undoubtedly a challenging period in their lives. We hope to give patients and their supporters some insight into the research we are doing in a few short talks followed by a tour of the research laboratories."

The repository of patient samples is now believed to be the largest, most rigorously collected set of longitudinal cancer patient samples in Ireland. As the sample collection continues, it provides researchers with the rare ability to assess the changing expression of potential biomarkers over a long period of time.

"Through our engagement with patients, the UCD and St Luke's teams hope to make a significant impact on the future of CHRT and [prostate cancer](#) treatment", added Professor Pennington.

More information: "Development of a label-free LC-MS/MS strategy to approach the identification of candidate protein biomarkers of disease recurrence in prostate cancer patients in a clinical trial of combined hormone and radiation therapy." *Proteomics Clin Appl.* 2013 Jun;7(5-6):316-26. [DOI: 10.1002/prca.201300004](https://doi.org/10.1002/prca.201300004)

"Discovery and Longitudinal Evaluation of Candidate Protein Biomarkers for Disease Recurrence in Prostate Cancer." *J. Proteome Res.*, 2015, 14 (7), pp 2769–2783 [DOI: 10.1021/acs.jproteome.5b00041](https://doi.org/10.1021/acs.jproteome.5b00041)

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