Two new cost-effective ways of predicting prostate cancer

Two new risk indicators for prostate cancer were unveiled at the 2011 European Multidisciplinary Cancer Congress in Stockholm.

Led by Dr David Ørsted at the Copenhagen University Hospital, Herlev, the first study shows that men diagnosed with benign prostate enlargement have an increased risk of developing and dying from prostate cancer.

Researchers investigated the association between benign prostate enlargement and prostate cancer by examining data from five national registries, on a total of 3 009 258 Danish men.

The sample included 53 315 diagnoses of prostate cancer and 25 459 cases of death as a result of prostate cancer. Clinical benign prostatic hyperplasia was determined by records of hospitalization (187 591 men) and/or operations for the condition (77 698 men) between 1980 and 2006, and the use of certain drugs indicated for the condition between 1995 and 2006 (143 365 men and 47 465 men respectively for the two treatments). The reference group was men without benign prostate hyperplasia.

Over 27 years, the study found that clinical benign prostate hyperplasia was associated with a two–three-fold increased risk of men developing prostate cancer, and with a two–eight-fold increased risk of them dying from prostate cancer.

The second Danish study, also led by Dr Ørsted, looked at whether prostate-specific antigen levels could predict prostate cancer incidence and mortality in the general population.

Researchers assessed blood samples collected from 4383 men aged between 20 and 94 years of age from the general population, who had taken part in the Copenhagen City Heart Study and followed them from 1981 through to 2009. They measured baseline levels of prostate-specific antigen and investigated whether this correlated with later prostate cancer incidence and mortality.

During the 28 years of follow-up covered by the Heart Study, 170 men in the sample developed prostate cancer and 94 died from the disease. Measuring the antigen levels, the researchers found that stepwise increases in prostate-specific antigen predicted a 3–44-fold increased risk of prostate cancer and a 2–12-fold increased risk of prostate cancer mortality.

They also found that the absolute 10-year risk of prostate cancer was 11–22% in those with prostate-specific antigen levels of 4.01–10.00 ng/ml and 37–79% in those with levels above 10.00 ng/ml.

The ranges are wide and the higher risk for some men can be explained, Dr Ørsted told the congress: 'The high risk for some men is probably the result of some of the participants having already developed sub-clinical prostate cancer at the time of their entry to the study. These men would have had a shorter time from study entry to diagnosis and consequently, higher risk estimates.'

The results of both studies could lead to more efficient and cost-effective screening for prostate cancer, with reductions in over-diagnosis and unnecessary treatment.

Smaller quadripolar cardiac resynchronization defibrillator

The Unify Quadra cardiac resynchronization therapy defibrillator works with the Quartet left ventricular pacing lead to allow physicians to effectively and efficiently manage the changing pacing needs of patients with heart failure with a downsized quadripolar pacing system. In Europe, heart failure affects more than 14 million people, and is projected to affect about 30 million by 2020.

St. Jude Medical introduced quadripolar technology last year in Europe with the Promote Quadra CRT-D, and is the only company to offer quadripolar technology. The system integrates multiple pacing configurations and features that enable physicians to optimize the system at implant and throughout the patient's life, as well as managing common pacing complications without the need for further surgeries.

The Unify Quadra provides all the benefits of quadripolar technology in a device with the industry's smallest footprint. The narrow shape allows physicians to implant the system using a shorter incision, with less time spent closing the incision, and a smaller scar for the patient.

The Quartet left ventricular pacing lead – used as part of the Unify Quadra system – features four electrodes instead of the usual two. Multiple pacing configurations allow the physician more options, including pacing closer to the base of the left ventricle, which recent studies associate with better patient outcomes and which may be less possible with traditional leads that only have two electrodes. The quadripolar pacing electrodes also have additional benefits, such as pacing around scar tissue in the heart and avoiding the most common pacing complications.

The Unify Quadra

Commenting on the technology, Dr Amir Zaidi, consultant cardiologist at the Central Manchester University Hospitals NHS Foundation Trust, said: 'Diaphragmatic stimulation is the most common implant-related problem that prevents my patients from receiving effective cardiac resynchronization therapy.' He continued: '...I believe its benefits [quadripolar technology] can make it the standard of care for cardiac resynchronization. With quadripolar technology, I can deliver effective treatment to patients who would otherwise be denied gold-standard therapy for heart failure using conventional CRT devices.'