Innovation award win to develop CT scans for osteoporosis

04 February 2014

Doctors at Cambridge University Hospitals have won national recognition for an idea which diagnoses osteoporosis during routine CT scans.

The project called ‘CORTEX: Catching Osteoporosis on Routine computed Tomography as an added Extra’ beat off competition from over 600 applications to receive 2014 NHS Innovation funding. The award will allow the team to diagnose and treat osteoporosis in the routine NHS imaging service while still conducting their basic research programme.

Osteoporosis means thin, porous bones which are more liable to break. It is a silent and growing epidemic in an ageing society- causing debilitating hip, spine and other fractures. It affects one in two women and one in five men over the age of 50.

The National Osteoporosis Society said there were 78,000 hip fractures a year in the UK. It said 10% of those people died within 30 days and 30% within a year.

Consultant Rheumatologist, Dr Ken Poole said “This funding gives us the chance to diagnose osteoporosis in patients coming here for an ordinary CT scan, even though the scan is being done for other reasons. Normally, this would require the patient to lie on a special piece of kit known as a phantom- which is not always feasible considering the thousands of CT scans done on the five machines here. The innovative step is called ‘asynchronous calibration’* from Mindways Software inc.- it allows us to measure bone density accurately without a phantom. It made a lot of sense to put the scanning and software technologies together- since it means no new scans, hospital visits or extra radiation are needed- it’s a ‘one stop shop’ for diagnosis.”
More than 40,000 CT scans are performed annually at Addenbrooke’s Hospital, and there is a large overlap between needing a CT scan and having risk factors for osteoporosis. Experts can now diagnose osteoporosis without needing to do any additional scans, by using the CT scan images from the body/pelvic scan already taken.

For example patients who were undergoing CT scans for kidney or bowel diseases can now receive additional information about their risk of developing osteoporosis.

The benefits for patients are clear. Having an early diagnosis of osteoporosis means they can take preventative action.

Winning this award means that the research team can now expand their work to other hospitals and clinics across the UK. They plan to develop a National Centre for CT Densitometry.

Arthritis Research UK, the Medical Research Council, the Evelyn Trust, the National Osteoporosis Society, Addenbrooke’s Charitable Trust and the NIHR Cambridge Biomedical Research Centre support the current research program. http://www.med.cam.ac.uk/poole/

*http://qct.com/home/academic-research/asynchronous-calibration-qct/