Detecting bone erosion in arthritic wrists

28 February 2008

Both magnetic resonance imaging (MRI) and computed tomography (CT) are more sensitive than radiography – the standard imaging technique – for detecting bone erosions in rheumatoid arthritis (RA), according to research published in the open access journal Arthritis Research & Therapy. The early detection of bone erosions is crucial for identifying those people most at risk from RA.

Uffe Møller Døhn from the Copenhagen University Hospital at Hvidovre in Denmark and co-workers carried out CT, MRI and radiography on the wrist joints of 17 RA patients and four healthy controls.

Taking CT as the reference method for detecting bone erosions, radiography and MRI both showed good specificity (99% and 93%, respectively) but radiography showed low sensitivity (24%) compared to the moderate sensitivity (61%) of MRI. They also found that there was strong agreement between the CT and MRI measurements of erosion volumes. The measured volumes also correlated closely with the Outcome Measures in Rheumatology (OMERACT) erosion scores, thus validating this scoring method further.

The researchers said the results show that CT may be useful for detecting and monitoring bone erosion in RA. Dr Møller Døhn stated: “The number of erosions detected on CT indicate that CT is a very sensitive method for detecting bone erosions in RA wrist bones, possibly even more sensitive than MRI.” However, he acknowledged that the technique’s sensitivity to change was not yet established and that its use of ionizing radiation and inability to detect soft tissue changes did count against it.

Source: BioMed Central