

18 F-Fluoride positron emission tomography/computed tomography for noninvasive in vivo quantification of pathophysiological bone metabolism in experimental murine arthritis.

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Abstract

Evaluation of disease severity in experimental models of rheumatoid arthritis is inevitably associated with assessment of structural bone damage. A noninvasive imaging technology allowing objective quantification of pathophysiological alterations of bone structure in rodents could substantially extend the methods used to date in preclinical arthritis research for staging of autoimmune disease severity or efficacy of therapeutical intervention. Sodium 18 F-fluoride (18 F-NaF) is a bone-seeking tracer well-suited for molecular imaging. Therefore, we systematically examined the use of 18 F-NaF positron emission tomography/computed tomography (PET/CT) in mice with glucose-6-phosphate isomerase (G6PI)-induced arthritis for quantification of

pathological bone metabolism.

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