Correlation between joint [F-18] FDG PET uptake and synovial TNF-alpha concentration: a study with two rabbit models of acute inflammatory arthritis.

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Abstract

Appl Radiat Isot. 2007 Nov;65(11):1221-6. Epub 2007 Jun 30.

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The objective of this study was to verify that the [F-18]FDG PET synovial uptake is correlated with the synovial fluid (SF) TNF-alpha concentration. Two rabbit models of acute inflammatory arthritis induced by human interleukin-8 and lipopolysaccharide were used. Modified standard uptake values (MSUVs) obtained from PET images of the animals were compared with results of SF TNF-alpha measurements. Statistically significant correlations were found between the MSUVs and the SF TNF-alpha ratios. An equation to estimate the TNF-alpha ratio from a MSUV was also derived.