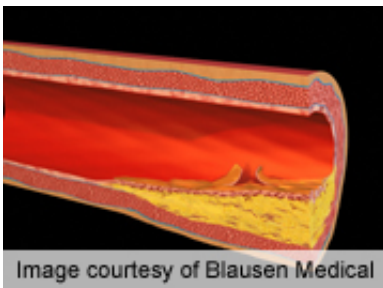


# Noninvasive $^{18}\text{F}$ -fluoride PET can identify culprit coronary plaques

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Combined positron emission tomography and computed tomography using the radioactive tracer  $^{18}\text{F}$ -sodium fluoride can identify ruptured and high-risk coronary plaques, according to a study published online Nov. 11 in *The Lancet*.

(HealthDay)—Combined positron emission tomography (PET) and computed tomography (CT) using the radioactive tracer  $^{18}\text{F}$ -sodium fluoride ( $^{18}\text{F}$ -NaF) can identify ruptured and high-risk coronary plaques, according to a study published online Nov. 11 in *The Lancet*.

Nikhil V. Joshi, M.D., from the University of Edinburgh in the United Kingdom, and colleagues conducted a prospective clinical trial involving 40 patients with [myocardial infarction](#) and 40 with stable angina who underwent  $^{18}\text{F}$ -NaF and  $^{18}\text{F}$ -fluorodeoxyglucose ( $^{18}\text{F}$ -FDG) PET-CT and invasive [coronary angiography](#). The comparison of  $^{18}\text{F}$ -fluoride tissue-to-background ratios of culprit and non-culprit coronary plaques of patients with [acute myocardial infarction](#) was the primary end point.

The researchers found that the highest coronary  $^{18}\text{F}$ -NaF uptake was seen in the culprit plaque (median maximum tissue-to-background ratio: culprit, 1.66 versus highest non-culprit, 1.24) in 93 percent of the patients with myocardial infarction. Coronary  $^{18}\text{F}$ -FDG was generally obscured by myocardial uptake, and no differences were seen between culprit and non-culprit lesions where discernible. At the site of all carotid plaque ruptures, marked  $^{18}\text{F}$ -NaF occurred, which correlated with histological evidence of active calcification, macrophage infiltration, apoptosis, and necrosis. Plaques with focal  $^{18}\text{F}$ -NaF uptake were seen in 45 percent of patients with stable angina, and these were associated with more high-risk features on intravascular ultrasound compared with those without uptake.

" $^{18}\text{F}$ -NaF PET-CT is the first non-invasive imaging method to identify and localize ruptured and high-risk coronary plaque," the authors write.

One author disclosed financial ties to Abbott Diagnostics.

**More information:** [Abstract](#)

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