Assessment of disease activity in alveolar echinococcosis: a comparison of contrast-enhanced ultrasound, three-phase helical CT and $[\text{F-18}]$fluorodeoxyglucose positron-emission tomography

Abstract:

Background: The objective of the present study was to assess activity or vascularization of focal liver lesions in alveolar echinococcosis using $[\text{F-18}]$fluorodeoxyglucose positron-emission tomography (FDG-PET) in comparison with contrast-enhanced ultrasound (CEUS) and three-phase helical computed tomography (CT). Methods: In this prospective study, 17 patients with confirmed alveolar echinococcosis (AE) of the liver were included (6 males, 11 females; average age 59 +/- 16 years; average duration of disease 10.5 years) and were then examined using FDG-PET, precontrast ultrasound (US), CEUS, and three-phase helical CT. We assessed metabolic activity (FDG-PET) and vascularization (CEUS and CT) of Echinococcus multilocularis specific hepatic lesions. Results: FDG-PET identified increased metabolic activity in the corresponding lesions in seven patients (41.2%). A vascularization pattern of echinococcal lesions was visualized in nine patients (52.9%) by CEUS and in four patients (23.5%) by CT. All positive FDG-PET findings were also positive at CEUS. Conclusions: There was association between findings of metabolic activity in AE at FDG-PET and vascularized lesions of the liver returned by CEUS. This suggests that CEUS may represent a cost-effective tool in the
decision making to perform FDG-PET examination.

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