ORIGINAL ARTICLE

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Precision of the gallbladder ejection fraction obtained with Tc-99m-pyridoxyl-5-methyl-tryptophan (^{99m}Tc-PMT) hepatobiliary scintigraphy as compared with the contraction ratio in three-dimensional computed tomography

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The gallbladder ejection fraction (GBEF) obtained with Tc-99m-pyridoxyl-5-methyl-tryptophan (^{99m}Tc-PMT) hepatobiliary scintigraphy has been used as a parameter of gallbladder function. To determine the accuracy of GBEF, the relationship with the contraction ratio of the gallbladder (GBCR) obtained with three-dimensional helical computed tomography (3D-CT) was studied. *Patients and methods:* A normal volunteer, 8 patients suffering from cholecystolithiasis and a patient with gallbladder dyskinesia were examined. The percent initial dose (%ID) for the gallbladder and GBEF with hepatobiliary scintigraphy were used to compare the volume of the gallbladder and GBCR which was measured by 3D-CT. *Results:* The %ID of the gallbladder was correlated with the volume of the gallbladder by 3D-CT ($Y = 1.000X - 1.818$, $r = 0.928$). GBEF was correlated well with GBCR by 3D-CT ($Y = 0.916X + 6.296$, $r = 0.975$). *Conclusions:* The %ID of the gallbladder obtained with hepatobiliary scintigraphy may be a good indicator of the volume of the gallbladder. The accuracy of GBEF was confirmed by comparison with 3D-CT examination. GBEF is considered a useful parameter of pathophysiological gallbladder function.

Key words: gallbladder emptying, Tc-99m-pyridoxyl-5-methyl-tryptophan (^{99m}Tc-PMT) hepatobiliary scintigraphy, ejection fraction of the gallbladder, helical CT, three dimensional computed tomography