Hepatocellular Carcinoma: Correlation between Vascular Endothelial Growth Factor Level and Degree of Enhancement by Multiphase Contrast Enhanced CT

곽병균1,2, 심형진1, 박연성1, 김수아4, 최동일3, 임효근3, 박철근6, 정진욱7, 박재형2
중앙대학교 의과대학 1방사선학교실, 1해부병리학교실, 4성애병원 방사선과, 성균관대학교 의과대학
5진단방사선학교실, 6해부병리학교실, 서울대학교 의과대학 7진단방사선학교실

Background To determine whether vascular endothelial growth factor (VEGF) is a histopathologic factor influencing contrast enhancement of hepatocellular carcinoma (HCC) at CT.

Methods Twenty-two nodular HCCs underwent multiphase helical CT and surgery. Tumor size, histologic grading of differentiation and type of hepatitis were evaluated. Tumor attenuation was graded as hyper-, iso- and hypo-attenuated. Immunohistochemical staining with anti-VEGF antibody was performed and scored as weak, intermediate and strong. Spearman’s rank correlation test was used.

Results Tumors ranged from 1.0 to 12.0 cm in size (mean, 5.1 cm). The degree of enhancement during the hepatic arterial phase was significantly correlated with VEGF expression (r=0.783, P<0.001). Size was negatively correlated with VEGF expression (r=-0.481, P<0.05) and the degree of enhancement (r=-0.507, P<0.05), but histologic grade and type of hepatitis were not correlated with VEGF expression, tumor size or degree of enhancement.

Conclusion VEGF expression in HCC correlates with the degree of contrast enhancement during arterial phase CT.