Potency of newly diagnosed to diabetes mellitus and impaired glucose tolerance on development of HCC

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Background/Aims: An association between diabetes mellitus (DM) and development of hepatocellular carcinoma (HCC) in a study with infected HCV patients has been previously suggested. We aim to identify potential predictors of HCC, who were newly-diagnosed as having DM by oral glucose tolerance test (OGTT).

Methods: This prospective observational study included 713 patients with either compensated or decompensated cirrhosis; these patients underwent a 75-g oral glucose tolerance test (OGTT). The patients were divided into three groups: patients with normal glucose tolerance (NGT), patients with IGT (100 ≤ fasting plasma glucose [FBG]< 126 mg/dL or 140 ≤ 2-h OGTT < 200 mg/dL), and patients with newly diagnosed DM (126 ≤ FBG or 200 mg/dL ≤ 2-h OGTT)

Results: Among 713 patients, NGT was diagnosed in 139 (19.5%), IGT in 252 (35.3%), and DM in 322 (45.2%). HCC developed in 81 patients over a median follow-up period of 42.0 months (interquartile range, 20.5–66.5 months): NGT, 9.3%; IGT, 12.3%; and DM, 9.6%. In patients with compensated cirrhosis (CTP class A; n = 415), neither IGT (19/157; HR, 1.740; P = 0.191) nor DM (22/173; HR, 1.784; P = 0.163) conferred a higher risk for development of HCC. Among patients with decompensated cirrhosis (CTP class B and C; n = 298), both IGT (12/95; HR, 1.603; P = 0.376) and DM (15/149; HR, 1.337; P = 0.575) also did not have significant impact on development of HCC. However, multivariate study in total patients showed that old age [adjusted hazard ratio (aHR) =1.043; 95% CI = 1.020–1.066; P < 0.001], male (aHR, 3.959; 95% CI = 1.894–8.275; P < 0.001), higher MELD score (aHR, 1.095; 95% CI = 1.033–1.161; P = 0.002) and higher FBG by OGTT (aHR, 1.005; 95% CI = 1.001–1.010; P = 0.018) were identified as independent predictors of development of HCC

Conclusions: Although newly diagnosed IGT and DM by OGTT is not a critical determinant for the development of HCC, higher FBG status carried an additional risk for HCC, and these patients should also be carefully monitored for HCC