

## Breast cancer patients have high prevalence and high recurrence rate of NAFLD

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**Background/Aims:** Breast cancer is most common cancer in women worldwide. The incidence of breast cancer is correlated with metabolic component including diabetes, hypertension, and obesity. Likewise breast cancer, metabolic components are important risk factors for development of NAFLD. In this study, we analyzed the prevalence of NAFLD in patients with breast cancer and the effect of NAFLD on the prognosis of breast cancer. **Methods:** Patients with breast cancer were enrolled from January 2007 to June 2017. Patients who had other chronic liver were excluded. Hepatic steatosis was evaluated by non-enhanced CT scan. We diagnosed NAFLD when the mean attenuation of the liver is lower than 40 HU or 10 HU lower than that of the spleen. 123 healthy controls who took non-enhanced CT scan were also analyzed. **Results:** Total 1587 patients were enrolled from January 2007 to June 2017. The prevalence of NAFLD in patients with breast cancer was 15.8% (251/1587) and it was significantly higher comparing with healthy control (8.9%, 11/123)(P=0.036). After propensity score matching, the difference of NAFLD prevalence was still significant between control group (8.9%, 11/123) and breast cancer patients (17.9%, 22/123) (P=0.040). In breast cancer patients, overall survival did not showed significant difference between NAFLD group and non-NAFLD group (P=0.304) (Figure A). However, recurrence-free survival was significantly higher in patients without NAFLD comparing with those with NAFLD (P=0.009) (Figure B). Among breast cancer patients received endocrine treatment, NAFLD group showed higher cumulative incidence of significant liver injury comparing with non-NAFLD group (P<0.001). **Conclusions:** The prevalence of NAFLD in patients with breast cancer is significantly high compared to healthy control group. Moreover, breast cancer patients with NAFLD showed poor prognosis in terms of recurrence. Therefore, diagnostic evaluation to determine whether or not NAFLD is present would be important in managing patients with breast cancer.

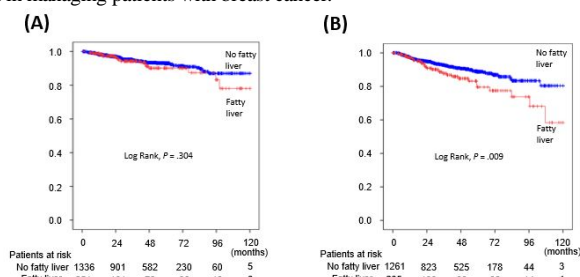


Figure K-M curve for overall survival (A) and recurrence-free survival (B)

## Unique clinical and histological portraits of hepatitis caused by Epstein-Barr virus infection

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**Background/Aims:** Although acute liver involvement by Epstein-Barr virus (EBV) mostly represents self-limited hepatitis, primary EBV infection in immunocompromised individuals can result in serious outcomes. We aimed to investigate demographic, laboratory, histological features, and clinical courses of acute EBV hepatitis (EH). **Methods:** This study included 26 adults ( $\geq 16$  years) with EH diagnosed at Asan Medical Center, Seoul, Korea between 2000 and 2016, which was defined as acute hepatitis accompanied by EBV infection identified by EBV encoded RNAs in liver specimens and/or quantitative EBV PCR in blood samples. 115 subjects who underwent liver biopsy and were diagnosed as having non-viral hepatitis during the same period were included as a control group. We examined presenting features of patients, and compared the results of pathology and EBV-related serology. **Results:** Among the 26 EH patients, 14 were male with average age of 41 years (range 16-77). The most common symptom was fever (46.2%), followed by jaundice (38.5%), and hepatosplenomegaly (19.2%). The median peak bilirubin was 30.7 mg/dL (0.4-30.7), aspartate aminotransferase 487 IU/L (26.5-487), alanine aminotransferase 766 IU/L (15-766), and alkaline phosphatase 419.5 IU/L (52.5-419.5). About 90% of patients normally recovered, but one death and two liver transplantations. Anti-VCA IgM was more frequently positive in the EH group (11.5% vs 0.9%; P<0.05). The mean EBV viral titer was  $4.00 \pm 0.81$  log copies/mL in EH group, whereas  $0.49 \pm 1.18$  log copies/mL in control group. In contrast to 4.3% of controls, 92.6% of EH cases revealed sinusoidal lymphocytic inflammation which is the typical histological feature of EH. (Fig1) Immunocompromised patients exist similarly between the EH (42.3%: 6 liver recipients, 2 inflammatory bowel diseases, and 3 malignancies) and control groups (58.3%: 56 liver recipients, 2 kidney recipients, 1 ulcerative colitis, 3 rheumatic disorders, and 5 malignancies) (P=NS). **Conclusions:** Our study showed that the majority of EH patients had high viral burden and a unique histological feature. EBV, which is rarely but sometimes fatally infected in the liver, should be considered one of the important causes of cryptogenic active hepatitis.

