Introduction:
While acute liver failure (ALF) develop coagulopathy, the risk of bleeding in ALF is controversial. We aimed to evaluate the bleeding risk of ALF among critically ill patients.

Methods:
We analyzed 200,859 critically ill patients from multi-center database who admitted to 335 Intensive care units (ICUs) in the United States between 2014 and 2015, which is monitored by eICU Programs. Patients without diagnosis of trauma and bleeding on admission were included. Primary outcome was all hemorrhage occurred during ICU stay. Logistic regression analysis was performed to evaluate the risk of bleeding in ICU.

Results:
Of 153,691 patients included in this study, 428 were ALF. Bleeding events were occurred in 1,817 (1.18%) patients. Intracranial hemorrhage (ICH) were occurred in 488 (0.32%), and gastrointestinal (GI) bleeding were in 827 (0.54%) cases. On multivariable Logistic regression analysis, variables significantly associated with all hemorrhage were ALF (Odds ratio [OR] 4.13; 95% confidence interval [CI]:2.52-6.77; p<0.0001), older age, African American, Hispanic, and Native American ethnicity, cardiac arrest, stroke, sepsis, mechanical ventilation, and history of GI bleeding. ALF were also associated with intracranial hemorrhage (OR:8.54; 95%CI:3.09-23.6, p<0.0001), and GI bleeding (OR:5.25; 95%CI:3.03-9.08; p<0.0001 ). ALF significantly strengthen magnitude of effect on all hemorrhage in mechanically ventilated patients (p=0.003) and sepsis (p=0.08).

Conclusion:
ALF is associated with all type of hemorrhage, including ICH and GI bleeding in critical care settings. ALF showed synergy effect on bleeding in patient with mechanical ventilation and sepsis.

References: