Introduction:
Acute liver failure (ALF) represents a life-threatening organ dysfunction associated with increased mortality and liver transplantation represents the only definitive treatment. The aim of this study was to assess the effects of renal replacement therapy in combination with hemoadsorption in ALF patients.

Methods:
Twenty-nine patients with ALF admitted to the intensive care unit (ICU) of Fundeni Clinical Institute were included in the study. After ICU admission, 3 consecutive session of hemoadsorption in combination with continuous veno-venous hemodiafiltration were applied. Number of organ dysfunctions and SIRS criteria were recorded at ICU admission. The following data were recorded before and after the 3 hemoadsorption therapies: Glasgow coma scale, PaO2/FiO2, creatinine, 24-hours urine output, bilirubin, leucocyte and platelet count, heart rate, mean arterial pressure and vasopressor support, C-reactive protein and procalcitonine. CLIF-SOFA score was calculated before and after the therapy. ICU length of stay and 28-days outcome were noted.

Results:
The mean age in the study group was 34±14 years. The median number of SIRS criteria was 3 [2,4] and the median number of organ dysfunctions was 3 [1,6]. The use of hemoadsorption was associated with a decrease in creatinine (from 1.9±1.4 to 1.2±0.8 mg/dL, p=0.02), bilirubin (from 14.2±12.6 to 9.2±9.1 mg/dL, p=0.05) and platelet count (96482±70913 /uL to 51275±24393 /uL, p=0.01). We also observed a decrease in Clif-SOFA score from 12.0±2.1 to 10.0±2.6 (p=0.05). Overall mortality was 37.9% (n=11). Six patients (20.7%) underwent liver transplantation with 100% 28-days survival.

Conclusion:
The use of hemoadsorption in patients with ALF is associated with improvement in liver and kidney functional tests and may represent a new therapy in bridging these patients to liver transplantation.