Introduction:
Early and expeditious evacuation of simple pleural effusion (SPE) in ventilated patients may improve their respiratory condition. Employment of ultrasonography (US) and pigtail catheters for SPE management has shown beneficial results and widely accepted. Nevertheless, methods of SPE evacuation are still under discussion. Objective of the study is to evaluate efficacy and safety of single step versus intermittent SPE evacuation in ventilated patients.

Methods:
Our retrospective study included 81 adult ventilated ICU patients with SPE from 05.2015 to 08.2017. US has been used for diagnosis and navigation of pigtail catheters insertion. In the a-group (40 patients) SPE evacuation was done by single step during one hour. In the b-group (41 patients) SPE evacuation was performed intermittently for 24 hours as usually recommended. In both groups SPE was evacuated by gravitation method. The outcomes of intervention were evaluated by chest US and mobile x-ray film.

Results:
Of 81 patients (52 males, 29 females; mean age 68.9) the main causes of SPE were: congestive heart failure (30%), pneumonia (22%), and malignancy (20%). The median evacuated volume was 781 ml (range 300-2400 ml). Catheters were removed if minimal fluid discharge (< 100 ml/day) has been observed during following 48 hours in a-group, and 72 hours in b-group. In both groups US and chest x-ray demonstrated re-expansion of compressed lung. There were no complications in either group.

Conclusion:
Single step evacuation provided safe, less time-consuming management of any SPE volume with the same efficacy in comparison to intermittent technique in ventilated patients.