Introduction:
Acute respiratory failure (ARF) is one of the major reason for admission of the patients with hematologic malignancies to the intensive care unit (ICU) and pneumonia is among the leading causes of lung infiltrates in these patients. Lung CT is the golden standard in the detection and characterization of pulmonary infiltrates, but it requires the transportation to the radiology units and radiation exposure. Ultrasound can be performed at the bedside without the need for transportation and without irradiation. The aim of this study was to compare the diagnostic accuracy of ultrasound in the detection of lung infiltrates, compared to CT scan.

Methods:
Patients admitted to the ICU for ARF and suspected pulmonary infection, who required CT for detection and characterization of lung infiltrates, were examined by ultrasound. The assessment of six regions per hemithorax was used; each region was classified for the presence of normal aeration, B lines, indicating interstitial fluid and consolidation +/- air bronchogram. Diagnostic variables were assessed for lung ultrasound, using CT as a reference point.

Results:
Pulmonary infiltrates consistent with pneumonia were confirmed by CT in 24/25 patients. Ultrasound detected either inhomogenous B lines or consolidation in 23/24 patients (total sensitivity 96%, specificity 100%, 95% CI 79.65% to 99.90% and 2.50% to 100.00%, PPV. Accuracy of ultrasound was 96.1% (80.36% to 99.90%).

Conclusion:
Ultrasound is fairly sensitive in the detection of lung infiltrates in patients with hematologic malignancies.

References: