

# **Efficacy of lung ultrasound in comparison with chest X ray in diagnosis of lung consolidation**

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## **Abstract**

**Introduction:** Lung ultrasound (LUS) is an easily accessible, radiation-free imaging technique that might be used as a diagnostic tool in community-acquired pneumonia.

**Aim:** To evaluate the efficacy of LUS in the diagnosis and follow up of CAP.

**Patients & Methods:** One hundred patients aged between 40 to 63 with mean 52.3 & SD  $\pm$  10 referred to the hospital with suspicion of CAP were enrolled. All patients underwent LUS on the day of admission, followed by chest radiograph (CXR). Lung ultrasound was also performed in 10th day after admission.

**Results:** Initial chest x-ray is correlated to initial chest ultrasound examination in diagnosing CAP, (R value 0.629, P < 0.001). Cohen's  $\kappa$  was run to determine if there is agreement between initial chest x-ray findings and initial chest ultrasound on diagnosis of community acquired pneumonia. There is moderate agreement,  $\kappa = .567$  (95% CI, 0.422 to 0.712), P < 0.001. Upon initial examination, Chest x-ray diagnosed CAP in 48.0% of patients, while lung US diagnosed CAP in 70% of patients. Upon initial examination, lung ultrasound was more sensitive than CXR (P value < 0.001). Accuracy of lung ultrasound was 95.0% and that of chest x-ray was 81.0% in relation to CT chest the gold standard with accuracy 100%.

**Conclusion:** Our study showed that LUS is a sensitive and highly specific diagnostic tool in CAP.

**Keywords:** *Lung ultrasound, Chest X-ray, Community acquired pneumonia*