P3935 : Ultrasound Lung Comets versus cardiac natriuretic peptides in patients with acute dyspnoea

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Background: Acute shortness of breath as a presenting symptom is a frequent challenge for physicians. The main differential diagnosis is between cardiac and non-cardiac origin of dyspnoea. Natriuretic peptides levels have been used to successfully aid in the diagnosis of congestive heart failure (CHF) in patients presenting with dyspnoea. Ultrasound lung comets (ULCs) are a useful chest sonography sign of increased extravascular lung water. Aim: To assess the concordance rate between ULCs and cardiac natriuretic peptides.

Methods: 275 patients (87 females; age 70±14 yrs) admitted with dyspnoea (NYHA class II, III or IV) to a Cardiology-Pneumology or Emergency Department were evaluated. Cardiac peptides assessment and chest sonography, scanning along the intercostal spaces, were performed in all (within 3 hours) and independently analyzed. NT-proBNP values ≥157 ng/l, BNP ≥100 ng/l and ULCs ≥5 were considered abnormal, according to pre-determined cut-offs.

Results: Abnormal values of natriuretic peptides were found in 251 patients, while ULCs were present in 220 patients. The total number of discordant cases was 36 (13%), with a concordance rate of 87%. The dominant source of discordance was due to abnormal natriuretic peptides and absence of ULCs (34 patients, see figure): in these patients the mean hospitalization time was significantly lower than in patients with abnormal cardiac peptides and presence of ULCs (7.8±3.7 vs 10.9±6 days, p<.001).

Conclusions: ULCs findings are in broad concordance with natriuretic peptides values. Being natriuretic peptides analysis not always available, especially in peripheral Emergency Departments, ULCs assessment could be a plausible alternative to identify CHF in patients with acute dyspnoea.