Ultrasound lung comet as a bedside sign of cardiogenic dyspnea

L. Gargani1, F. Frasai1, S. Gigliovana1, M. Arguts2, E. Poggiann1, M. Emdin2, G. Motto2, E. Piccioni2, CNR Institute of Clinical Physiology, Pisa, Italy; 2Casa di Cura “Montevaccane”, Mercogliano, Italy; 3Director Echocardiography and Stress Echo Lab, Sanier Med. Researcher National Res. Council, Pisa, Italy

Background: Ultrasound lung comet (ULC) is a simple sign of extra vascular lung water generated by water-brickened subpleural interlobal septa. Differentiating congestive heart failure from non-cardiogenic causes of dyspnea is very important for patients presenting in the emergency department with acute dyspnea.

Aim: To assess whether ULCs could differentiate cardiac from non-cardiac causes of dyspnea.

Methods: ULC was assessed by commercially available echocardiographic instrument (standard in 25, portable unit in 26) in 60 patients (22 females, age 71±13 yrs) presenting to the emergency department with acute dyspnea. The accuracy of the method for etiologic diagnosis was compared on the basis of the final diagnosis established by physicians who were blinded to ULC findings.

Results: ULC assessment could be obtained in all patients (feasibility=100%). The imaging and analysis time was always <2'. ULC were 33±25 in the 41 patients with cardiogenic and 16±22 in the 12 with pneumogenic dyspnea (p<0.05). A ROC analysis identified 7 ULCs as the best diagnostic cut-off to separate cardiogenic from non-cardiogenic dyspnea (Figure) with 90% sensitivity and 67% specificity.

Conclusion: In patients admitted to the emergency department with acute dyspnea, ULC is a simple, highly feasible, effective tool to identify the cardiac origin of dyspnea through indirect imaging of extra vascular lung water.

276 Accurancy and long-term prognostic significance of semiquantitative assessment of left ventricular contractile reserve in idiopathic dilated cardiomyopathy

P. Olasovje1, Z.B. Popovec2, A. Vlahovic-Stipac2, N. Tusn2, R.V. Vidakovic1, J.D. Vasiljevic, M. Asanin, M. Matic, B. Vujacic-Tesic1, J. Kostic, A. Vojodic2, Z. Vaslijovic. Institute for Cardiovascular Diseases, Belgrade, Serbia and Montenegro

Background: The linear regression equation is: IVRT = [(PA systolic pressure in post LV injection phase) + (PA diastolic pressure in post LV injection phase)]/5. The IVRT value has been compared in the three groups: group I: 51.79 ms; 8.35 STD, group II: 74.19ms±10.51 STD, group III: 108.27ms±16.43 STD. The IVRT values between the three groups have significant differences (P<0.0001). An IVRT = 77 ms predicted pulmonary artery systolic pressure (Post LV injection was also independently assessed in semiquantitative manner (5% increments) by physicians who were blinded to ULC findings. The accuracy of the method for etiologic diagnosis was compared on the basis of the final diagnosis established by physicians who were blinded to ULC findings.

Results: A total of 27 (45.8%) patients died during the follow-up. According to Kaplan-Meier preservatives analysis survival LVR was assessed either quantitatively or semiquantitatively identified patients with more favorable prognosis. However, the separation was the best when LVCR was assessed semiquantitatively by DSE expert and experienced second reader (p<0.0001 vs. 0.001) both for LVEF, indexed LVEF, indexed LVEF and LVEF. The unadjusted in-hospital mortality rate was significantly higher in patients with AF (14%) than in patients without AF (6.8%), p=0.03. After adjustment for baseline characteristics, the presence of HF (odds ratio [OR]=4.7) was associated with increased in-hospital mortality. The unadjusted mortality rate was significantly higher at 7 year (30.1% vs. 18.8%, p<0.001) in patients with AF. The adjusted 7 year mortality rate remained significantly higher with HF (OR=3.3).

Conclusion: HF in AMI complicated by AF independently predicts in-hospital and long term mortality in patients under 65 years, and not the AF.