Abstract: P949

Thoracic echo in diagnosis and monitoring of pulmonary congestion in heart failure

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Background and Aim: Pulmonary congestion is useful marker of decompensated HF. The aim was to study the importance of Lung "Comet tail" artefact in diagnosis and monitoring of Pulmonary Congestion in patients with different types Heart Failure.

Methods: We studied 430 patients with II-IV NYHA class HF (238 with Reduced EF HF -SHF, 100 patient – middle range EF HF-MHF, and 92 patients – HF with preserved systolic function - DHF), 70 patients with chronic obstructive pulmonary disease (COPD) and 175 patients with different heart diseases but without HF (control). Ultrasound evaluation of a lung was done in horizontal or vertical positions of patient, from 10 points of thoracic wall which corresponded to the projection lung lobes.

Results: In patients with CHF we significantly often found the "Comet Tail" artefact (CTa) There was good correlation between the count of CTa registration points from the thoracic wall and the heart failure NYHA class (r=0.57), left ventricular systolic (r=0.43) and diastolic (r=0.34) diameters and negative correlation with EF% (r=-0.44). In the HF gr. CTa was registered from 3 or more points of thoracic wall in 89.6%, in SHF -93%, in MHF-89%, and in DHF -83%, in COPD -9% and in control -7% of patients. If we take 4 points and more as a reference value, the sensitivity of sign in diagnosis of pulmonary congestion due to HF, was 83.5% and specify – 97.6%. In CHF group CTPh was prominent, protracted and multiple while in the II group it was single and short lasting. After use of diuretics CTa disappears or was less prominent and the count of CTa registration points from the thoracic wall was lesser then before treatment.

Conclusion: Thoracic US is accurate method for evaluation and monitoring of pulmonary congestion in patients with systolic and diastolic HF. The US sign of pulmonary congestion is a CTa, which is multiple and registered from larger area of thoracic wall (4 points or more).