

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 1164

**Publication Number:** P2434

**Abstract Group:** 2.1. Acute Critical Care

**Keyword 1:** COPD - exacerbations **Keyword 2:** Acute respiratory failure **Keyword 3:** Critically ill patients

**Title:** NT-proBNP accurately reflects the impact of severe COPD exacerbation on the right ventricle (RV)

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**Body:** Introduction The type and extent of RV function alterations during COPD exacerbation are poorly described. Whether these alterations could be reflected by changes in NT-proBNP levels, is also unknown. This study aimed to describe the changes in RV morphology and function during COPD exacerbation, and delineate their relationship with circulating levels of NT-pro BNP. Patients and Methods Sixty-nine consecutive patients (mean age  $66 \pm 10$ , 53 men) presenting with COPD exacerbation requiring ventilatory support, underwent echocardiographic assessment of RV function (RV diameter, RV/LV ratio, TAD, Teig, PAPs) on admission and at discharge in survivors ( $n = 57$ ). NT-pro BNP levels were measured simultaneously. Results Exacerbation was ascribed to infectious origin in 54 patients. Non invasive ventilation was used in 58 patients. 57 patients survived the index episode and had an echocardiographic examination at discharge. Variation of RV echocardiographic variables between admission and discharge are depicted in figure 1.

NT-proBNP levels significantly decreased from  $2111 \pm 400$  to  $595 \pm 111$  pg/ml. Significant correlations were found between NT-proBNP on one side, and the ratio RV/LV ( $R^2 = 0.22$  ;  $p = 0.02$ ), PAPs ( $R^2 = 0.37$  ;  $p = 0.001$ ), and RV diameter ( $R = 0.24$ ;  $p = 0.01$ ). Conclusion: COPD exacerbation has a significant impact on both, the morphology and function of the right ventricle. NT-proBNP accurately reflects these changes.