Abstract P188 Figure 1 Mean salivary pepsin over 7 days with standard error bars.

between day 1 salivary pepsin and symptom questionnaires. Salivary pepsin measurement over 7 days identified four patterns: persistently low ($n=3$); persistently high ($n=3$); high on day 1 only ($n=6$); and variable ($n=13$).

Discussion Peptest was acceptable to patients. Salivary pepsin measurement appears to be able to categorise different population groups by pattern of pepsin concentration throughout the week. As a feasibility study, it was not powered to identify correlation with clinical outcomes. Our Results suggest that using salivary pepsin as a marker of GOR is feasible and is worthy of further study in a large prospective cohort to evaluate its relationship to outcomes.

REFERENCE

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REDUCING READMISSION IN HIGH RISK COPD PATIENTS

K Sunderland, K Pears, D Anderson. *Queen Elizabeth University Hospital, Glasgow, UK*

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Introduction and Objectives COPD patients with acute exacerbations make up a significant proportion of the inpatient hospital population. This patient group is at risk of recurrent readmission to hospital, which not only reduces patient quality of life but also has financial implications. The aim of this study was to correctly identify COPD patients at high risk of readmission and reduce this by addressing reversible factors and/or creating an anticipatory care plan (ACP).

Methods 200 consecutive admissions with an acute exacerbation of COPD were reviewed to identify risk factors for readmission at 28 days or mortality within 6 months. Patients who were identified as high risk of readmission were reviewed using an algorithm to identify potential reversible factors and if ACP would be appropriate. This review was carried out either during admission or at the point of discharge.

Results The following factors were shown to predict readmission or death, recurrent admissions (≥ 2 in the last year) (readmission: $p=0.002$, $OR=3.56$, death: $p<0.001$, $OR=11.64$), NIV during admission (readmission: $p=0.073$, $OR=4.06$, death: $p=0.023$, $OR=7.17$) and long term oxygen therapy (readmission: $p=0.034$, $OR=3.23$, death: $p<0.001$, $OR=9.22$). 72 subjects were identified as having a high risk of readmission. Of these 72 subjects, 14 had the algorithm applied during admission (prospectively) and 58 at the point of discharge (retrospectively). 53% of the study population was readmitted within 28 days. 21% of the prospective group was readmitted compared to 60% of the retrospective group.

55% of the prospective group had an ACP in place compared to 32% of the retrospective group.

Conclusions By identifying characteristics associated with high risk of readmission in patients with COPD, we were able to apply an algorithm in the hope of reducing readmission. Although current numbers are small, initial Results indicate that the use of the algorithm during a hospital admission could significantly reduce readmission to hospital. Undoubtedly more data is required. In the future routine use of this proactive approach could potentially improve patient care as well as reduce the financial burden for healthcare providers.

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SPECIALIST EMERGENCY CARE AND COPD OUTCOMES

ND Lane, K Brewin, TM Hartley, K Gray, M Burgess, J Steer, SC Bourke. *Northumbria Healthcare NHS Foundation Trust, North Tyneside, UK*

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Introduction On 16/06/15 the Northumbria Specialist Emergency Care Hospital (NSECH) opened, introducing 24/7 speciality consultant on-call, direct transfer from the emergency department to speciality wards and 7 day consultant review. A Respiratory support unit opened for non-invasive ventilation (NIV), with enhanced staffing ratios. Pre-NSECH the NIV service included mandated training and competency assessment, 24/7 single point of access, initiation of ventilation in the Emergency Department, a door-to-mask time target, early titration of pressures, and structured weaning. Pneumonia or hypercapnic coma complicating ECOPD is not considered a contra-indication to NIV. Post-NSECH staff-patient ratios increased, the NIV pathway was streamlined and structured review introduced. The NCEPOD 2015 enquiry and 2013 BTS NIV audit showed $\geq 34\%$ of patients receiving acute NIV died.

Methods Patients hospitalised with ECOPD between 1/1/13 and 31/12/16 were identified using ICD10 J44 codes. Ventilation status was confirmed from rolling audit data, combined with a coding search (J96) and verification from patient records. Age, gender, admission from nursing home, consolidation, Charlson index, key comorbidities, length of stay and inpatient and 30 day mortality were captured. Population characteristics and outcomes were compared pre- and post-NSECH. Independent predictors of mortality were identified by logistic regression. Inpatient and 30 day mortality, adjusted for baseline performance and prognostic indices, was plotted (VLAD: Variable Life Adjusted Display).

Results 6291 patients were identified. Pre- and post-NSECH, demographic and clinical indices were similar. Among ventilated patients, 96.5% and 98% received NIV respectively. Inpatient plus 30 day mortality was lower post-NSECH for the whole cohort, and for ventilated and non-ventilated sub-groups. Independent predictors of mortality in a) the whole cohort were: NSECH [Beta=0.64; $p=0.0001$], age, admission from nursing home and Charlson Index; and b) in ventilated patients were: NSECH [Beta=0.51; $p=0.0016$], age and male gender. The VLAD plot showed sustained improvement in observed/expected mortality post-NSECH. Post-NSECH median length of stay fell by one day in both sub-groups.

Conclusions Introduction of 24/7 specialist emergency care was associated with a substantial fall in ECOPD mortality from strong baseline performance. Improved outcome was not