Abstract P71 Figure 1 The relationship between the total ODI and the ratio of total to non-supine ODI

REFERENCES

- Levendowski DJ, *et al.* Assessment of a neck-based treatment and monitoring device for positional obstructive sleep apnea. *J Clin Sleep Med* 2014;**10**(8):863–71.
- Levendowski DJ, *et al.* Capability of a neck worn device to measure sleep/wake, airway position, and differentiate benign snoring from obstructive sleep apnea. *J Clin Monit Comput* 2015;**29**:53–64.

P72 BASELINE DATA FROM THE ROSA TRIAL: A RANDOMISED CONTROLLED TRIAL OF THE EFFECT OF CPAP ON DIABETIC MACULAR OEDEMA IN PEOPLE WITH CONCURRENT OBSTRUCTIVE SLEEP APNOEA

SD West, J Hughes, B Prudon. *NUTH, Newcastle, UK*

10.1136/thoraxjnl-2016-209333.215

The ROSA trial (Retinopathy and Obstructive Sleep Apnoea) is a multi-centre randomised controlled trial conducted in the United Kingdom. The hypothesis is that CPAP (continuous positive airway pressure) will improve visual acuity in people with diabetic macular oedema and concurrent OSA, due to improvements in intermittent hypoxia, blood pressure and catecholamine surges. An uncontrolled study showed visual acuity improved equivalent to one line on the logMAR chart in those people who used CPAP regularly at six months (Mason RH *et al.* *Respiration* 2012). We present baseline data from a larger randomised controlled trial.

Methods Patients of Eye Hospitals across the UK with diabetic macular oedema and type 2 diabetes were offered home sleep studies to diagnose OSA. These were posted to them with instructions by the coordinating centre and returned by post after a single night's recording. Those patients found to have severe OSA (ODI > 20 or AHI > 30), along with visual impairment due to diabetic macular oedema were randomised to usual ophthalmic care (control) or usual ophthalmic care plus CPAP for one year. Anyone with respiratory failure, excessive daytime sleepiness requiring urgent treatment or cataract precluding ophthalmic assessment was excluded. Follow up occurred at three, six and twelve months and included measures of sleepiness, health related quality of life, visual acuity, optical coherence tomography and retinal photography.

Abstract P72 Table 1

	CPAP N = 64	Control N = 66	P value
Age (years)	65.3 (10.5)	63.7 (9.0)	n.s.
% male	67	79	
Body mass index (kg/m ²)	34.9 (8.7)	35.1 (6.3)	n.s.
Neck circumference (cm)	43.2 (4.1)	44.9 (4.0)	0.017
Duration of diabetes (years)	16.3 (8.7)	15.2 (9.5)	n.s.
HbA1c (mmol/l)	67.0 (17.5)	66.7 (23.1)	n.s.
Oxygen desaturation index/hr	37.2 (18.3)	35.9 (15.1)	n.s.

Results There have been 130 patients randomised from 23 UK centres; 64 to CPAP, 66 to control. The groups are well matched at baseline (Table).

Conclusions This novel study demonstrates that it is feasible to conduct a multicentre randomised controlled trial with UK Eye Hospitals and their local Sleep service, all coordinated by a single centre (Newcastle). The UK NHS National Institute for Health Research has facilitated this research via the Local Clinical Research Network at each centre. Minimisation criteria for randomisation has enabled the two groups to be well matched at baseline, essential for this type of study. The results of this trial will determine whether CPAP could form a novel treatment for diabetic macular oedema and visual impairment in people with concurrent obstructive sleep apnoea; these results are eagerly awaited when follow up is completed in 2017.

P73 ACUTE NON INVASIVE VENTILATION (NIV)-RELATED NASAL BRIDGE PRESSURE ULCERATION: EFFECT OF A PROACTIVE PREVENTION APPROACH

¹G Stygall, ¹K Morley, ¹L Pickup, ¹A Oakes, ¹P Antoine-Pitterson, ²B Chakraborty, ¹R Mukherjee. ¹Heart of England NHS Foundation Trust, Birmingham, UK; ²School of Mathematics, University of Birmingham, Birmingham, UK

10.1136/thoraxjnl-2016-209333.216

Introduction NIV applied via full face masks is increasingly becoming the standard of care in the treatment of acute hypercapnic respiratory failure. Most guidelines suggest good skin care: strategies include regular pressure relief, use of masks with softer cushions/pressure-avoidance masks and application of pressure-relieving dressing to the skin to redistribute pressure and reduce friction. We set out to examine the effect of a systematic proactive prevention approach to prevent Grade 2 Pressure ulcers in a Ward Based Physiotherapy-led acute NIV service in a general hospital serving a population of about 400000. This included (a) prophylactic protective dressing and (b) reactive change to a pressure-avoidance mask for identified Grade 1 pressure sore.

Methods Data was collected from 01/05/2014 and 31/08/2015 which included an 8-month period before (period1) and an 8-month period after (period2) introduction of the proactive prevention approach. Five main sets of data were collected; the NIV mask used (model and size), whether the mask was changed, the total number of days using NIV, pressure ulcer grading and the outcome of the NIV admission. A pressure ulcer was defined as Grade 2 or above.

Results Grade 2 Pressure ulcer rates showed a trend in reduction by over 50% following the change in practice (but fell short of statistical significance: chi-squared test p-value = 0.3). In period1

there were 11 Grade 2 pressure ulcers from 109 admissions; in period 2 there were 5 pressure ulcers from 105 admissions. Benefits of using total face masks for NIV delivery were also noted with those patients who were poorly compliant with the standard NIV full face mask to prevent treatment failure.

Conclusions An early prophylactic pressure-relieving dressing and a reactive change to a pressure-avoidance mask for identified Grade 1 pressure sore, can reduce the chance of developing Grade 2 pressure ulcers for patients using NIV acutely. Further studies including longitudinal data on a proactive prevention approach adjusted for acute NIV duration for NIV-related nasal bridge pressure ulceration are needed to confirm the utility of this approach.

P74 NON-INVASIVE VENTILATION DELIVERED ON A STANDARD RESPIRATORY UNIT COMPARED TO USE IN LEVEL 2 CARE SETTING: IS THERE AN IDEAL SERVICE DELIVERY MODEL?

¹A Jayadev, ²K Mcvinnie, ²I Moonsie. ¹The Royal Free Hospital, London, UK; ²North Middlesex University Hospital, London, UK

10.1136/thoraxjnl-2016-209333.217

Introduction BTS guidelines recommend Non-Invasive Ventilation (NIV) should take place in a clinical environment with enhanced monitoring, predicting 20% of all cases may need level 2 or 3 care.¹ However, current practice varies between and within NHS organisations. A management led service change within our Trust in 2013 enabled us to test the null hypothesis that there is no significant difference in mortality of COPD patients requiring NIV on an open respiratory-led unit (level 1 care), compared to a closed, anaesthetist led Level 2 setting (PCU, Progressive Care Unit).

Methods An electronic search was performed to find patients on PCU whom received NIV between 1st January and 30th November 2014. Inclusion criteria were patients that had received NIV for COPD exacerbations solely. Data from the physician led respiratory unit between Jan–Nov 2011 was prospectively collected, and the two datasets compared.

Results In the respiratory unit 75 patients were admitted for NIV of which 54 met the criteria for inclusion in the analysis. In the PCU group 110 patients were admitted between Jan–Nov 2014, of which 55 were included for analysis.

Samples were matched in gender, with no significant difference between groups. The average age of patients treated in PCU was 69.8 years, and 74.4 years on the respiratory unit, which is statistically significant (Mann-Whitney U Test, $p = 0.012$). The mortality on PCU was 27.2% compared to 20.4% on the respiratory unit, which was not statistically significant. Mean pH on PCU was 7.33 compared to 7.24 on the respiratory Unit, which is statistically significant. Mean pCO_2 was 10.06 on PCU, and 10.5 on the respiratory unit, which is statistically significant. Average length of stay of ward patients was 15 days, compared to 11.4 days on PCU, which was not statistically significant.

Conclusions NIV delivered on a physician-led respiratory unit was not inferior in mortality and length of stay compared with a

closed, ITU-led service. Interestingly we found a significant difference in age of patients being treated with NIV, with significantly older patients receiving this on ward with no difference in overall mortality.

REFERENCE

1 BTS Guidelines Management of AHRF 2016. <http://www.brit-thoracic.org.uk>

P75 PATIENT EXPERIENCE OF NON-INVASIVE VENTILATION: A QUALITATIVE STUDY

N Goldman, L Richardson, S Blakey, L Staveacre, SAA Bloch. Imperial College Healthcare NHS Trust, London, UK

10.1136/thoraxjnl-2016-209333.218

Introduction Non-invasive ventilation (NIV) is an effective treatment for acute type 2 respiratory failure, often avoiding intubation and improving mortality. However many patients struggle to tolerate NIV. There is limited understanding of patients' or their relatives/carers subjective experience of NIV. As good patient experience is increasingly recognised to reflect high-quality care we conducted an in-depth experience-based questionnaire aiming to identify key concerns of patients, and their relatives/carers, treated with NIV, which would reflect potential targets for service improvement.

Method In a qualitative, exploratory study patients started acutely on NIV were identified. Patients and relatives/carers completed a questionnaire with both free text and Likert style responses. Data were analysed using thematic analysis.

Results 20 questionnaires were completed (15 patients, 5 relatives). From the responses we identified key themes. Emotional responses were positive and negative. Positively - all patients and carers felt that NIV had helped. However whilst *all* carers would wish their relatives to have NIV again, 2 of the patients felt they would not. Negative emotional responses were related to fear and anxiety of NIV. A significant theme emerged surrounding the physical discomfort of NIV. Descriptions of NIV are represented in Figure 1. Patients and relatives identified that negative feelings were partly due to lack of understanding. Only 9 patients felt that they were involved in decision making and only 6 felt that NIV had been adequately explained. 11 patients and all relatives felt that written information would be beneficial. Finally a further theme described different levels of competence between staff and across wards and the varying degrees of feeling safe that this created.

Conclusion This study enabled us to identify key areas to address when considering quality improvement for NIV service delivery. Whilst our sample size is small, and biased towards survivors, the themes are strong and add significantly to the available literature. Some aspects of NIV are non-modifiable however focus on patient involvement and experience to provide high-quality care may facilitate improved experience and outcomes. We aim to address these points by expanding on this work in an experience-based co-designed project, funded by CLAHRC.

Withdrawn notices

Stygall G, Morley K, Pickup L, *et al.* P73 Acute Non Invasive Ventilation (NIV)–related nasal bridge pressure ulceration: effect of a proactive prevention approach. *Thorax* 2016;71: A124–A125. doi:10.1136/thoraxjnl-2016-209333.216

This abstract has been withdrawn.

Thorax 2017;**72**:287. doi:10.1136/thoraxjnl-2016-209333.216wthn

CrossMark