Abstract P32 Table 1 Patient Demographics

n=30	Physiology (n=9) (SD)	Combined (n=21) (SD)	p value
Sex (% m)	67	67	1.000
Age (years)	71 (7.8)	67 (8.1)	0.188
BMI (m/kg2)	29 (11)	26.4 (8.5)	0.497
Smoking Pack Years	0	21 (17.7)	-
FVC (%pred)	78 (25.7)	60 (25.6)	0.135
SNIP (cmH20)	29 (23.7)	31 (20.5)	0.822
pC02 (kpa)	5.9 (0.71)	6.15 (1.07)	0.526
HC03- (mmol/L)	30.1 (3.82)	29.8 (3.98)	0.731
IPAP (cmH20)	13 (4)	14 (3)	0.869
EPAP (cmH20)	5 (1)	5 (1)	0.348
Interface (% full face)	100	90	0.338
30 day compliance (%)	44	62	0.376
90 day compliance (%)	56	86	0.073

BMI=Body Mass Index. FVC – Forced vital capacity. SNIP=sniff inspiratory nasal pressure. IPAP=Inspiratory positive airway pressure. EPAP=expiratory positive airway pressure.

compliance (>4 hrs per night >5 nights per week) was obtained from a remote monitoring platform (ResMed AirView). Patients were sub-grouped into reason for NIV trial; physiological impairment (Phys) and physiological impairment plus symptoms (Comb). Between group comparisons were made using pC02, FVC, SNIP, 30 and 90-day compliance.

Results Patient demographics are shown in Table 1. In total 30 patients with MND were referred. A total of 21(70%) patients were initiated on NIV due to a combination of physiological impairment plus symptoms. No between group differences were observed for FVC, SNIP and pC02 (p=0.135, p=0.822, p=0.526, respectively). There was no difference in time from diagnosis to NIV trial (p=0.082) or time from NIV initiation to follow up (p=4.83). Both 30 and 90-day compliance were similar between groups (p=0.376, p=0.073, respectively). MND phenotypes (bulbar; limb) had similar 30-day compliance (p=0.961).

Discussion Our data provides evidence to suggest commencement of NIV at the earliest opportunity may increase the likelihood of effective symptom control and survival advantage regardless of initial patient presentation. Even in the absence of significant symptoms patients with both types of clinical features present with similar baseline physiology and achieve comparable therapy compliance. In addition, patients with bulbar impairment are as compliant as those without.

P33 VOTECO2ALS: VALIDATION OF TIDAL EXPIRED CO2 MEASURED AT HOME AS SURVEILLANCE FOR VENTILATORY FAILURE IN PEOPLE WITH MOTOR NEURONE DISEASE (MND)

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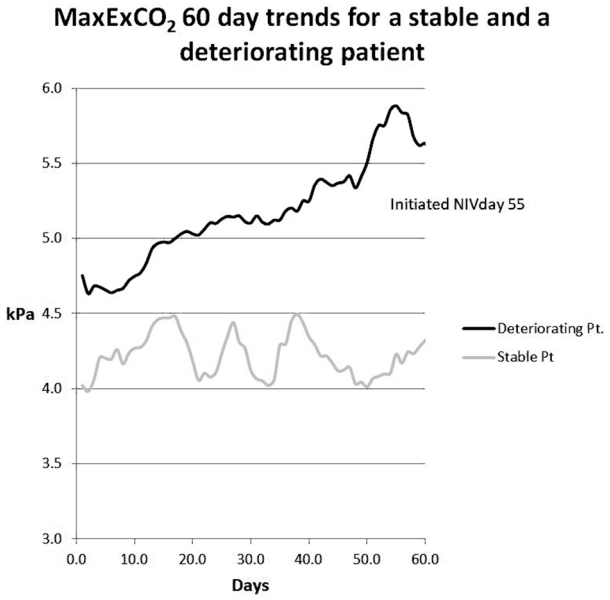
10.1136/thorax-2019-BTSabstracts2019.176

Introduction and objectives For people with MND who might benefit from home non-invasive ventilation (NIV), current NICE guidance recommends 3-monthly surveillance visits with review of respiratory symptoms, lung function and daytime SpO_2. In previous work we have found these recommended parameters poorly predict an elevated arterial CO_2 ($PaCO_2$) and the 3 month intervals can be too long as patients die unexpectedly between appointments. We are developing a home-monitoring approach, using personalised capnometry-derived indices, to try to identify developing ventilatory failure, potentially improving on current management pathways. We present initial findings from our pilot study.

Methods Patients with MND attending routine clinics have been invited to use a novel LED-based capnometer 3 times daily at home for up to 52 weeks. At 3-monthly clinic visits, participants perform capnometry and have arterial blood gases (measuring $PaCO_2$) along with daytime SpO_2 and lung function tests. The primary study aim was to assess agreement between values for CO_2 from capnometry and $PaCO_2$. Secondary aims include an examination of changes in a number of mathematically extracted features of capnometry over time to discover if any predict clinical deterioration.

Results We have recruited 28 participants for home capnometry. Data for $PaCO_2$ from clinic visits (n=39) and paired measures from capnometry were analysed for correlation. The strongest relationship was for the maximum expired (MaxEx) CO_2 but even for this r was just 0.4 (p=0.01). Bland-Altmann analysis confirms that agreement between capnometry and $PaCO_2$ was weak with a trend towards an offset with capnometry under calling the $PaCO_2$. However early analysis of home monitoring over several weeks shows potential for differentiating between stable and deteriorating patients. The attached figure shows plots of 7 day rolling average MaxExCO$_2$ for a clinically stable participant and one who deteriorated and required NIV.

Conclusions Preliminary data show weak agreement between selected capnometry parameters and $PaCO_2$ in clinic. Changes over time in extracted data suggest that home monitoring with capnometry may differentiate stable and deteriorating patients. This might be a trigger for clinical review in a timely fashion while reducing unnecessary clinic visits.



Abstract P33 Figure 1 MaxExCO$_2$60 day trends for a stable and a deteriorating patient