Abstract P212 Table 1 Demographic, co-morbidities, treatment and outcome data

Data for all patients treated with CPAP/HFNO on respiratory wards for COVID-19

	Adults for intubation (n=203)	Adults not for intubation (DNI) (n=106)	p-value
<i>Demographics and co-morbidities</i>			
Age*	60.3 (± 12.6)	76.3 (± 11.4)	<0.001
Male sex (%)	68.8	57.5	0.049
Black, Asian & Minority Ethnic (%)	61.1	48.1	0.029
Body mass index*	29.8 (± 5.7)	29.7 (± 9.7)	0.95
Diabetes (%)	30.2	41.5	0.047
Cardiovascular disease (%)	49.5	69.8	<0.001
Chronic respiratory disease (%)	20.3	40.6	<0.001
Mental health disease (%)	7.9	18.9	0.04
Smoking history (%)	34.0	41.9	0.277
Charlson co-morbidity index	3 (2–5)	3 (2–5)	0.956
Clinical frailty score	3 (2–4)	5 (4–6)	<0.001
<i>Admission data and outcomes</i>			
Day of COVID-19 symptoms on admission to respiratory ward	9 (7–12)	8 (5.5–12)	0.119
Treated with dexamethasone (%)	99.5	97.2	0.085
Treated with remdesivir (%)	37.1	29.5	0.184
Treated with tocilizumab (%)	10.4	4.7	0.089
Died (%)	25.6	74.5	<0.001
Factors associated with mortality in adults with DNI treated with CPAP/HFNO			
	Odds ratio	95% lower confidence interval	95% upper confidence interval
Age	1.04	1.00	1.09
Male sex	2.51	1.03	6.13
Black, Asian & Minority Ethnic	1.00	0.41	2.40
Body mass index	0.99	0.95	1.04
Diabetes	1.28	0.52	3.16
Cardiovascular disease	0.76	0.28	2.02
Chronic respiratory disease	0.99	0.41	2.41
Mental health disease	0.75	0.26	2.21
Smoking history	1.40	0.41	4.80
Charlson co-morbidity index	1.02	0.85	1.22
Clinical frailty score	1.06	0.73	1.54
Treated with remdesivir	0.73	0.28	1.88
Treated with tocilizumab	1.39	0.15	12.98
Given sedatives	4.35	1.37	13.82

*Presented as mean with standard deviation. Non-parametric data presented as median with IQR.

Introduction Respiratory failure in COVID pneumonia is often associated with ARDS. Invasive mechanical ventilation (IMV) is associated with high mortality and prolonged hospital stay. Continuous positive airways pressure (CPAP) has emerged as a bridge to IMV or as ceiling of care in patients with high clinical frailty scale (CFS).

Methods We retrospectively analysed data of patients admitted to our respiratory support unit (RSU) between September 2020 till January 2021. Patients admitted to our RSU received CPAP, High flow nasal oxygen (HFNO) and non invasive ventilation (NIV).

Results 118 patients were included in the analysis. Mean age was 71 years with 61% (n = 72) comprising of male patients. 77 patients (65%) patients receiving respiratory support (RS) died. 80(67%) patients had more 2 or more co morbidities. 60%(n=71) and 20.3% (n =24) received CPAP and HFNO as predominant modality respectively. Mean CFS was 4.3 in survival group as compared to 4.7 in survival group (p 1.98). 88% patients (n=67) who died were aged above 65. Average time on RS was 7.5 days and length of stay (LOS) was 12.5 days. RS compliance was higher in survival group 85%(n=35) as compared to deceased group 42%(n=32). Time on RS in survival and deceased group were comparable 7.2 days and 8.4 days respectively (p 1.98). Time from positive PCR test to start of RS was lower in survival group (2.9 days vs 2 days, p 0.18). Mean D Dimers were 1.7 in survival group as compared to deceased group 3.5 (p 0.18). Use of syringe driver was high in deceased group (66% n=51) as compared to survival group (n=2). Mean BMI was higher in survival group (33.9 vs 28.7, p 0.001)

Abstract P213 Table 1

	CPAP survived	CPAP Deceased	P value
Age	62	77	0.000004*
BMI	33	28.7	0.001*
CFS	4.3	4.7	1.98
CRP	89	136	0.004*
D Dimer	1.7	3.6	0.18
Troponin	325	125	0.19
Time to start RS (days)	2	2.9	0.10
Length of stay(days)	13.4	12.1	0.42
Days on RS (days)	8.4	7.2	1.98

*p < 0.05 = statistically significant

Discussion Age, high CFS, and poor compliance with CPAP is associated with higher mortality in COVID 19 related ARDS. Further studies are needed to assess impact of troponin and D Dimer on COVID related ARDS outcomes.

P213 FACTORS INFLUENCING OUTCOME IN COVID-19 PATIENTS REQUIRING RESPIRATORY SUPPORT – A SINGLE CENTRE EXPERIENCE FROM WEST MIDLANDS

S Irshad, D Puntan, S Butt, Z Ansari, N Nathani, A Razak. Sandwell and West Birmingham NHS Hospitals, Birmingham, UK

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P214 COVID-19 MORTALITY RATES IN A DISTRICT GENERAL RESPIRATORY SUPPORT UNIT

A Yousuf, M Selvan, SH Lee, P Hawkins, R Badiger. Colchester General Hospital, Colchester, UK

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Introduction The use of non-invasive respiratory support for COVID-19 related respiratory failure outside of Intensive Care Units (ICU), delivered in respiratory support units, became widespread during the COVID-19 pandemic. There is paucity of data thus far for outcomes in this patient cohort.

Methods We retrospectively reviewed the medical notes of 89 patients with COVID-19 pneumonia admitted to our recently opened (April 2020) Respiratory Support Unit (RSU) at Colchester General Hospital from 17th April, 2020 to 13th February, 2021. Mean age was 69 years (range 30 – 93 years) and 56 patients were male. Sixty three patients received continuous positive airway pressure (CPAP), 6 patients received high flow nasal oxygen (HFNO), 13 patients received a combination of CPAP with periods of HFNO and 7 patients received non-invasive ventilation (NIV).

Results On admission to the RSU, patients had average saturations of 87.5% (range 50 – 99%) with an average pO₂ of 7.69kPa (range 3.6 – 18). The majority of patients were receiving fraction of inspired oxygen (FiO₂) greater than 0.6. RSU success (wean from CPAP/NIV/HFNO) was 24.7%. RSU failure (either escalation to ICU or death, depending on treatment-escalation status) was 75.3%. The overall mortality rate was 71.9%. Mortality was higher (80%) in those patients who were not for escalation to ICU. Mortality in those for full treatment escalation was 42.1%. Higher mortality occurred in patients with multiple comorbidities, increasing age and higher Rookwood Clinical frailty scores (CFS). Patients without any additional organ dysfunction had lower mortality (62.5% vs 87.9%). Increasing mortality was observed with increasing time from hospital arrival to RSU admission. All patients aged 80 years or above and those with a CFS 6 died. Complications included pulmonary embolism (n=3), pneumothorax (n=1) and pneumomediastinum (n=1).

Abstract P214 Table 1

Mortality by groups

Age groups	30–39	40–49	50–59	60–69	70–79	≥80
Mortality (%)	0	40	50	71.4	79.5	100
CFS	1	2	3	4	5	6
Mortality (%)	20	43	79	77.3	87.5	100
Number of comorbidities	0	1	2	3	4	
Mortality (%)	42.9	46.1	76.9	80	84.6	
Time to admission to RSU (days)	Less than 1	1–2	3–7	8 or more		
Mortality (%)	63.2	64.7	81.5	81.8		

Conclusion These data demonstrate the high mortality in patients with respiratory failure secondary to COVID-19 pneumonia admitted to our RSU, particularly in those who were not for escalation to ICU. Increasing age, number of comorbidities and CFS were associated with treatment failure as well as time between presentation and admission to RSU. Careful patient selection with consideration of these factors is vital when identifying patients appropriate for respiratory support.

P215 A RETROSPECTIVE OBSERVATIONAL STUDY OF COVID-19 PATIENTS ON A RESPIRATORY HIGH CARE UNIT (RHCU)

R O'Neill, J Reece, A Lal, M Saeed, SL Tan. *Worcestershire Acute Hospitals NHS Trust, Redditch, Worcestershire, UK*

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During the COVID-19 pandemic, our district general hospital serving a population of 200,000, transformed a medical ward into a Respiratory High Care Unit (RHCU) – managing COVID positive and negative patients. Our primary mode of oxygenation was continuous positive-airway pressure (CPAP).

Between 1st June 2020 and 31st March 2021, 359 patients were admitted to RHCU. We performed a retrospective observational study assessing COVID-positive aerosol generating procedure (AGP) patients. 156 patients (43%) fit this criteria, 144 notes were available for analysis.

96% of patients were admitted on ≥40% FiO₂. 23% of patients were admitted from Accident and Emergency.

Abstract P215 Table 1

RHCU data	COVID-19 AGP (n = 144)
Gender – male (%)	72
Age (mean years)	66.2
White ethnicity (%)	94
Current or ex-smoker (%)	45
CFS of admissions (%)	
- 1–2	52
- 3–4	36
- ≥5	12
FiO ₂ ≥40% prior to admission to RHCU (%)	96
Days from hospital admission to AGP (no. of patients)	
- 1–3	62.5
- 4–7	27.8
- ≥8	9.7
Average pO ₂ prior to AGP (kPa)	8.26
Survival based on CFS (%)	
- 1	87
- 2	55
- 3	26
- 4	10
Patients for escalation to ICU (% total)	50
- Patients admitted to ICU (% total)	20
ICU outcome (% mortality)	52
Novel treatment (% of those eligible):	
- Dexamethasone	100
- Correct anticoagulation	95
- Tocilizumab	87
- Remdesivir	61
RECOVERY trial recruitment (%)	29
Duration of hospitalisation (days)	16.6
Average time on AGP (days)	6.2
RHCU outcomes (%)	
- Discharged	19
- Transferred to another ward	22
- Transferred to ICU	20
- Died	39
Overall RHCU end hospital outcome (% mortality)	52