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INTRODUCTION

The clinical spectrum of disease in patients with Covid-19 infection is wide and varies from a mild respiratory illness to a severe viral pneumonia indistinguishable from acute respiratory distress syndrome (ARDS). Mortality rates of mechanically ventilated patients is universally high and it is suggested the heterogeneity of disease pathophysiology means established therapeutic approaches to treatment of ARDS are not applicable in its management¹.

AIM

To describe demographic and physiological data in patients with Covid-19 admitted to ICU and assess outcome following treatment with standardized therapies for ARDS

METHOD

Baseline clinical and demographic information was obtained from electronic records and paper notes of all patients admitted to ICU with Covid-19 in the Belfast Trust between 1st March- 1st June 2020. Daily physiological data was gathered and ICU outcome was recorded for each patient. Treatment was at the clinician's discretion according to institutional guidelines based on established evidence based therapies for ARDS. Baseline demographic, clinical data and outcomes were compared to national Covid-19 outcome data taken from the Intensive Care Network Audit and Research Centre to give context².

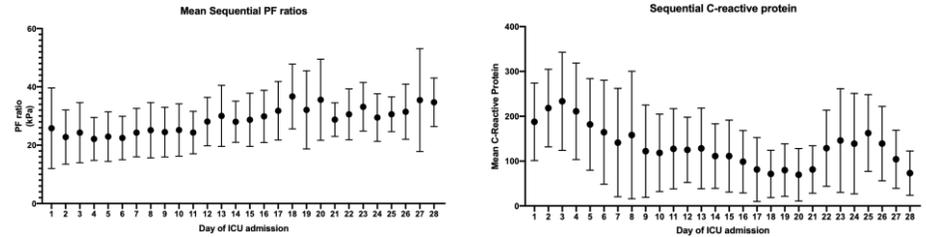
RESULTS

Baseline demographics and physiology of the Study Cohort

	Study cohort (n=45)	ICNARC Report 24/07/2020 (n=10667)
Age at admission (Mean + SD)	55 (11.2)	58.8 (12.7)
Sex n (%) Female	8 (17.8)	3141 (29.8)
Male	37 (82.2)	7409 (70.2)
Hospital stay prior to admission (Days), median (IQR)	1 (0,3)	1 (0,3)
APACHE II score, mean (SD)	12.0 (4.5)	15.1 (5.3)
Mechanical ventilation in first 24 hours, n (%)	43 (95.6)	6037 (58.8)
Median PaO ₂ /FiO ₂ Ratios in first 24 hours, Median (+IQR) (mmHg)	16.1 (11.6, 20.5)	15.1 (10.8, 21.1)

Respiratory and systemic physiology

42 patients (93%) met the specified Berlin definition of ARDS at time of presentation with the majority within the moderate to severe category³. Compliance with guidelines for treatment of ARDS was high. PaO₂/FiO₂ ratios reach a nadir at Day 4 before improving. This appeared to correlate with peak CRP levels suggesting a relationship between hypoxemia and inflammation.



ICU mortality and outcomes

	Study cohort (n=45)	ICNARC Report 24/07/20 (n=10228)
ICU mortality, n (%)	4 (8.9)	4078 (39.9)
Hospital mortality, n (%)	4 (8.9)	-
Length of ICU stay (days), median (IQR)		
All patients	14 (7.5, 20.5)	-
Survivors	14 (8, 20.5)	12 (5, 28)
Hospital length of stay (days), N=43, median (IQR)		
All patients	21 (14,35)	-
Survivors	21 (14,38)	-
Duration of mechanical ventilation (days), median (IQR)	13 (8,19)	13 (7, 23)

CONCLUSIONS

Covid-19 pneumonia fits within the spectrum of ARDS and produces similar physiology. In this cohort of patients we have shown that adherence to evidence based guidelines for ARDS in the management of Covid-19 pneumonia is associated with a much lower mortality than already published.

REFERENCES

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