



The clinical course of patients hospitalised for COVID-19 treatment in Ireland: a retrospective cohort study in Dublin's North Inner City (the 'Mater 100')

Browne, R.¹, Connolly, S.P.¹, O'Kelly, B.¹, Cronin, C.¹, Cullen, W.^{1,2}, Avramovic, G.¹, McHugh, T.¹, O'Connor, E.², Cotter, A.^{1,2}, Doran, P.², McGinty, T.^{1,2}, O'Callaghan, D.¹, Gaine, S.¹, Sheehan, G.¹, Brazil, E.¹, Marsh, B.¹, Lambert, J.S.^{1,2}.

1. Mater Misericordiae University Hospital, Dublin, Ireland
2. School of Medicine, University College Dublin, Ireland



Introduction

- Since March 2020, Ireland has experienced an outbreak of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).
- To date, the epidemiology of COVID-19 on a population level has been well described. As of October 10th 2020, 41,714 cases of COVID-19 have been reported in Ireland, with 1,824 deaths¹. However, little is known about those patients who require hospitalisation and their outcomes.
- To improve understanding of the clinical characteristics of this emerging infection, this study presents a retrospective review of patient data to examine the clinical characteristics of patients admitted for COVID-19 hospital treatment.

Methods

- The present study presents data on the first 100 adult inpatients admitted to the Mater Misericordiae University Hospital (MMUH) for treatment of COVID-19 infection from time of disease outbreak in March 2020 to April 1st 2020.

Data Collection

- Anonymised data was collected from clinical records. Variables examined included baseline demographics, clinical parameters and health outcome measures, including: age; gender; length of hospital admission; presence of pre-existing morbidity or other illnesses at admission; subsequent clinical care; and treatment outcomes. Missing data were excluded from the analysis.

Data Analyses

- SPSS (version 26.0) was used for all analyses.

Results

Patient Demographics

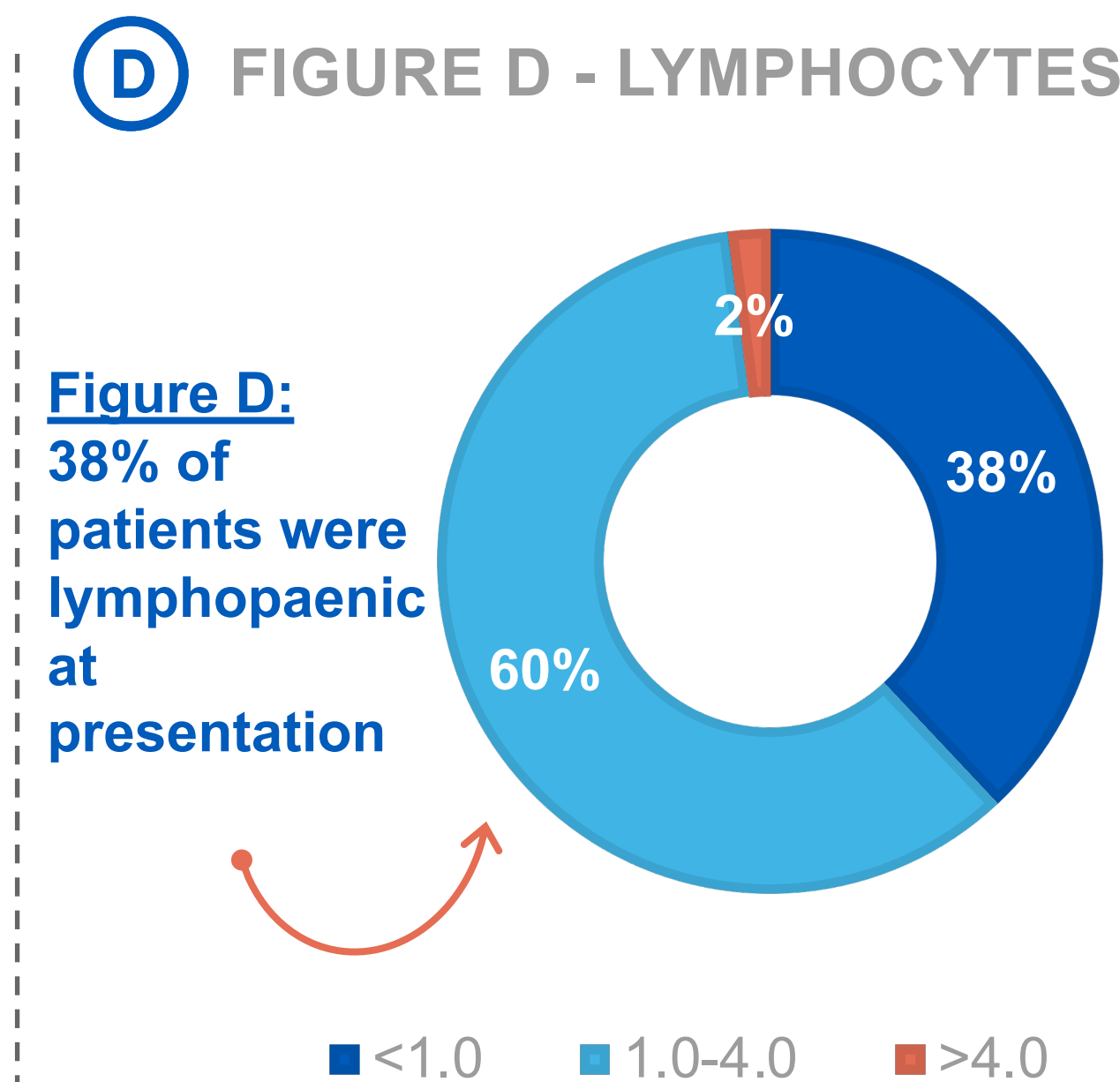
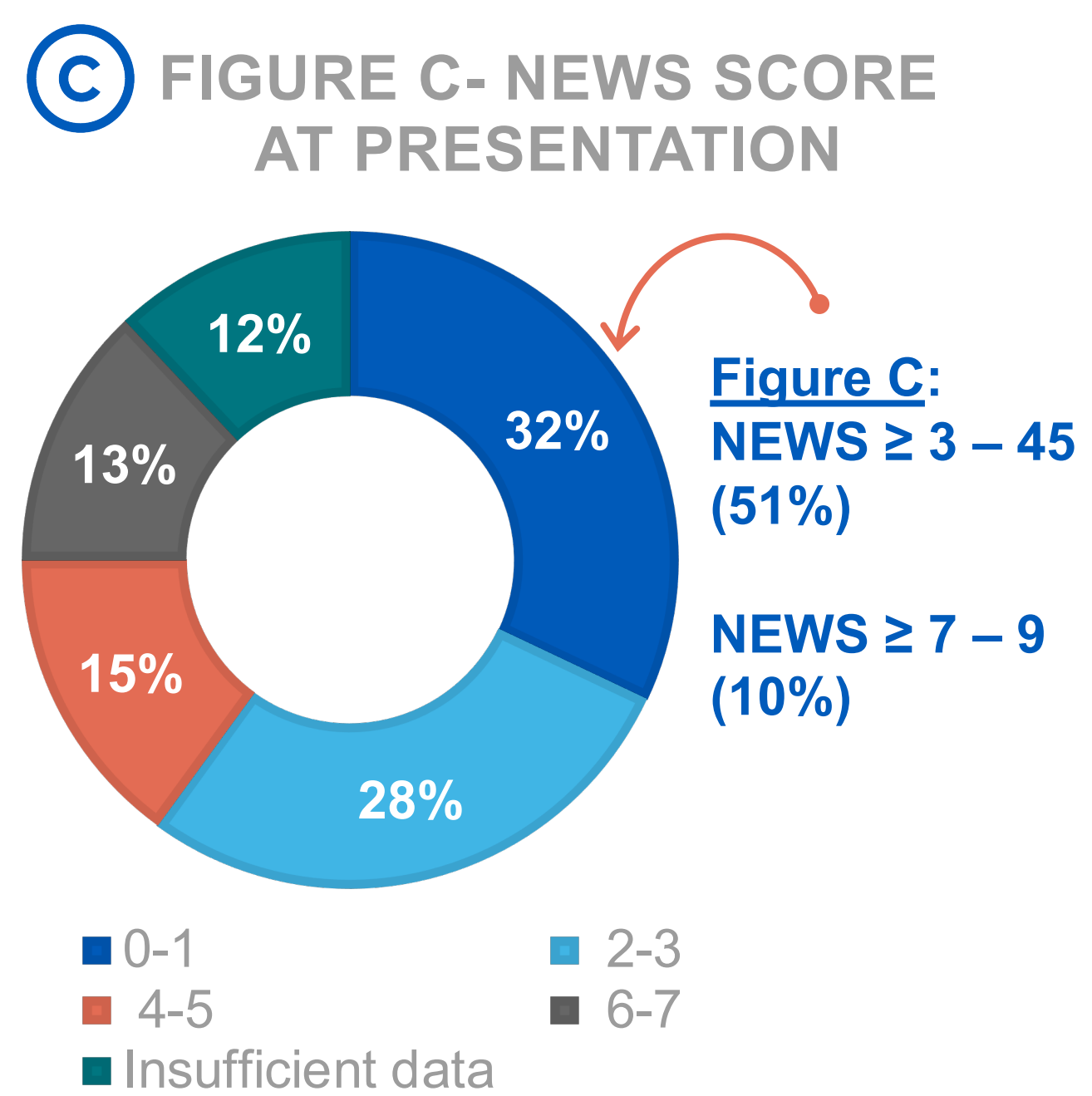
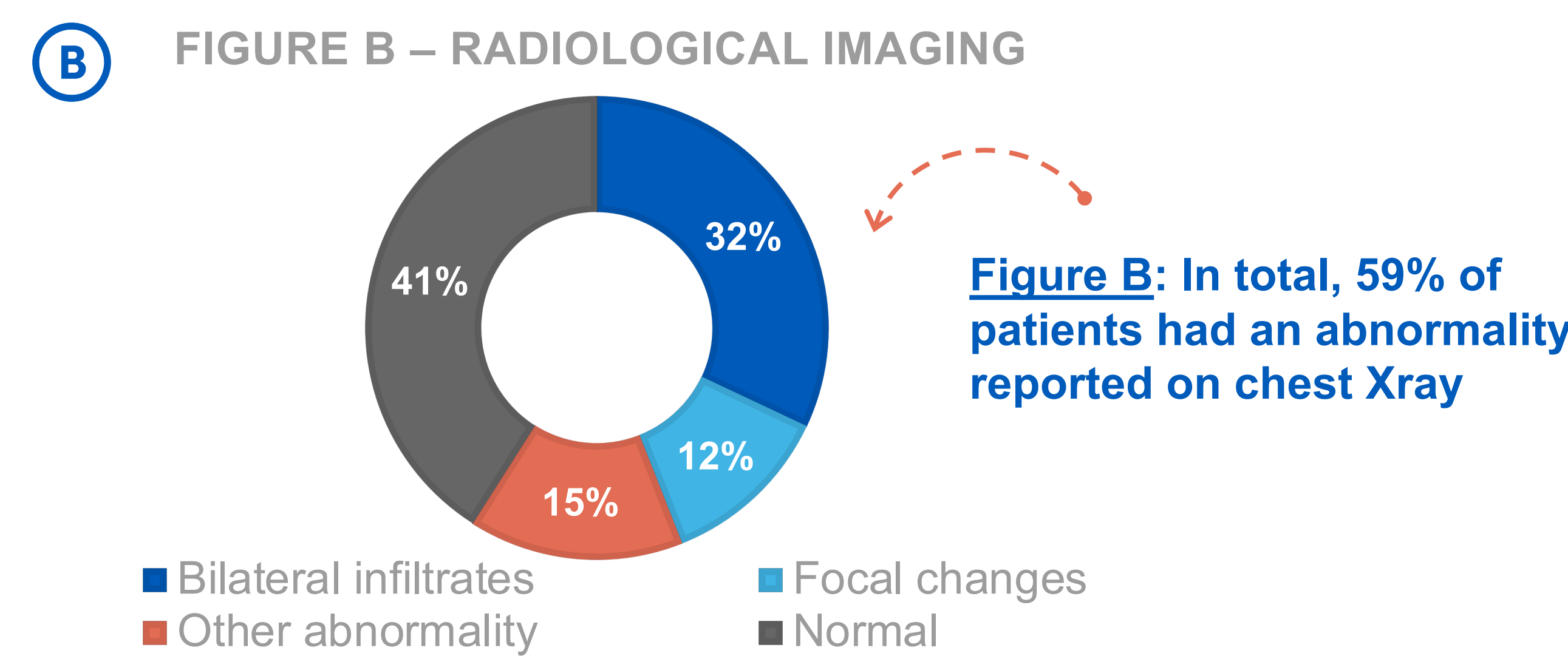
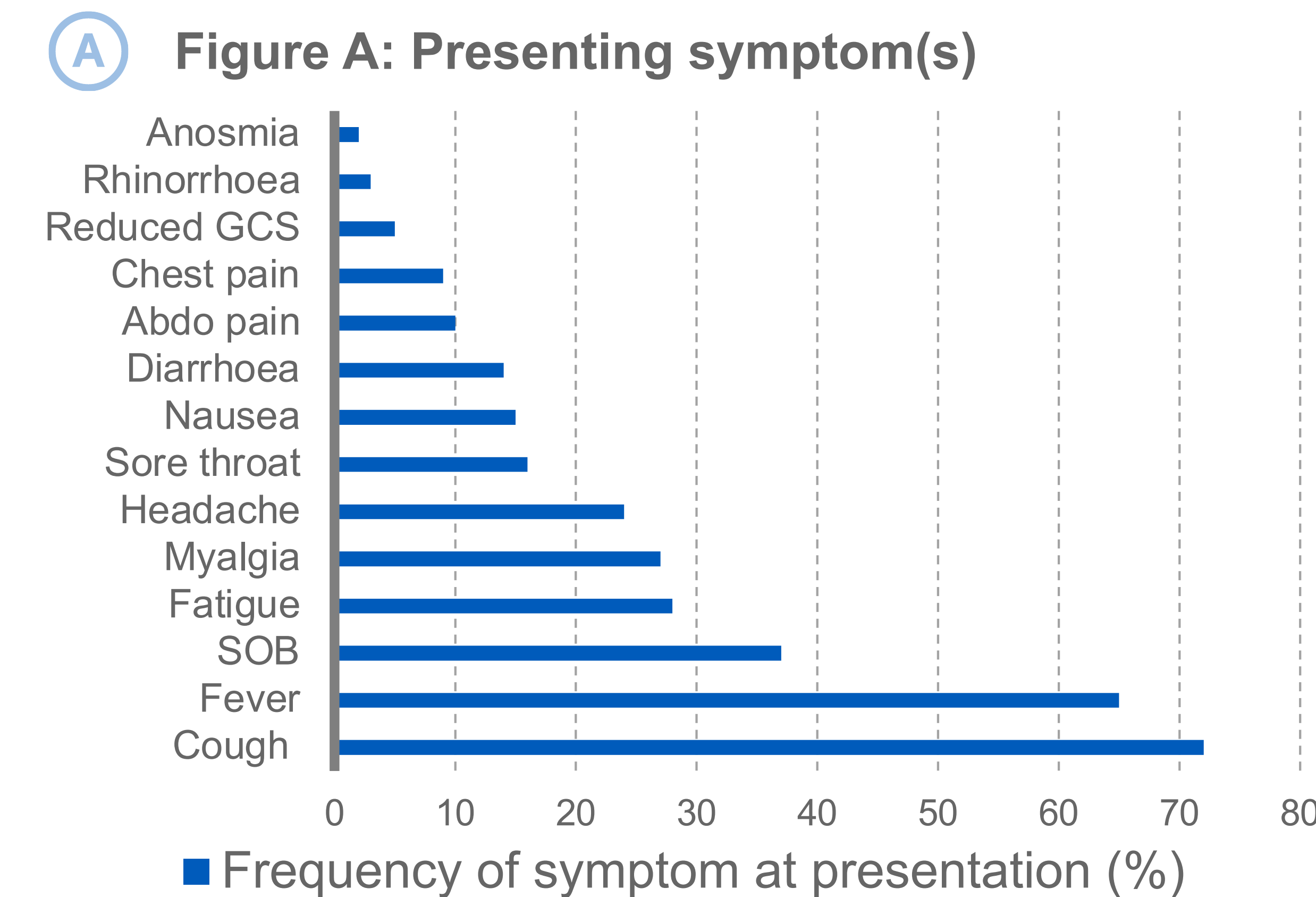
- Fifty-eight patients (58%) were male, 55 (63%) were Irish nationals [See Table 1]. Eighty-three (88%) were reported as having community-acquired infection. Fifty-four patients had at least one pre-existing chronic illness, most commonly hypertension (16%), diabetes (12%), and asthma (11%).

Table 1: Patient Demographics

Variable	Characteristic	n (% of total, where recorded)
Gender	Male	58 (58%)
	Female	42 (42%)
Occupation	Retired	16 (17%)
	Hospitality/Retail	16 (17%)
	Unemployed	12 (13%)
	Healthcare	12 (12%)
	Homemaker	9 (10%)
	Student	7 (7%)
	Finance/legal/Admin	7 (7%)
	Construction	5 (5%)
	Other	10 (11%)
	Missing	6
Smoking Status	Current/previous	21 (25.6%)
	Never	61 (74.4%)
	Not recorded	18
Route of Infection	Household	24 (25%)
	Occupational	13 (14%)
	Foreign Travel	10 (10%)
	Healthcare	7 (7%)
	Unknown	42 (43%)
Missing	4	

Descriptive Data – Findings at initial assessment

- Patients were symptomatic for a median of five days prior to diagnosis (IQR=2.5-7 days), and most commonly reported cough (72%), fever (65%), dyspnoea (37%), fatigue (28%), myalgia (27%), headache (24%), and sore throat (15%) [See Figure A].



- All 100 patients had chest imaging, with an abnormality reported in 59% of cases [See Figure B]. Excluding missing data, a National Early Warning Score² (NEWS) ≥ 3 was observed in 51% of patients and a NEWS score ≥ 7 in 10% [See Figure C]. Common biochemical abnormalities on presentation included elevated levels of C-Reactive Protein (74%), ferritin (63%) and D-dimer (62%). 42% of patients had a neutrophil / lymphocyte ratio >3.5 , and 38% of patients had a lymphopaenia [See Figure D].

Patient Outcomes

- A total of 27 patients (27%) required supplemental oxygen, 17 (17%) of whom were admitted to the intensive care unit, with 14 (14%) requiring ventilation. A total of 4 (4%) patients died. The median length of hospital stay was nine days (IQR=6-11).

Discussion

- COVID-19 is a potentially life-threatening disease associated with considerable mortality. This study presents the clinical characteristics and early outcomes of the first 100 patients hospitalized with the disease in Dublin's North Inner City. Furthermore, it highlights the importance of clinical, laboratory and radiological parameters in assessing disease severity.
- In terms of study limitations, there was a low threshold to admit patients for hospital treatment as part of the containment strategy in the earliest phase of the pandemic. Further, large-scale studies under current admission practices would better demonstrate patient outcomes, as well as investigate factors predicting poor prognosis.

References

- Health Protection Surveillance Centre (HPSC) 2020. <https://covid19ireland-geohive.hub.arcgis.com>. Accessed: 11/10/20
- National Early Warning Score (NEWS) Standardising the assessment of acute-illness severity in the NHS. Royal College of Physicians. (<https://www.rcplondon.ac.uk/>). Accessed October 13th 2020.