Dysphagia in hospitalised adults with COVID-19: Not just a consequence of critical illness and intubation

Christine Davis,[1] Dr Lee Pryor,[1,2] Anne Gatley[1]

1. Royal Adelaide Hospital, Central Adelaide Local Health Network
2. School of Allied Health Science and Practice, University of Adelaide

Introduction

Background

Acute oropharyngeal dysphagia is known to be associated with COVID-19 critical illness, including Intensive Care Unit (ICU) admission, intubation, ventilation, and tracheostomy (Archer et al., 2021, Boggiano et al., 2021; Clayton et al., 2022; Miles et al., 2022; Regan et al., 2021).

Circumstances arising from border closures and quarantine requirements in South Australia during the COVID-19 pandemic created a unique situation in our state. During the height of the pandemic, the Royal Adelaide Hospital Speech Pathology team observed that most referrals for dysphagia management in patients with COVID-19 were for patients who had not required admission to the ICU.

In a small prospective study of 41 non-intubated COVID-19 positive inpatients, which excluded patients with pre-morbid/chronic dysphagia, Grilli et al., (2022) established that 20% (8/41) of these patients experienced dysphagia during their hospitalisation.

In a multi-site study, including 315 COVID-19 positive patients in acute care, Regan et al., (2021) determined that dysphagia was present in patients with and without intubation during their hospitalisation. There was a 20-fold increase in dysphagia impacting on oral intake status for those patients who had required intubation and a 30-fold increase for those with neurological manifestations of COVID-19 (Regan et al., 2021).

Aim

To describe the characteristics of a cohort of adult patients with dysphagia, admitted to acute hospital with COVID-19, including the aetiology and severity of dysphagia, diet texture and fluid recommendations and outcomes at discharge.

Methods

A single site, retrospective audit of medical records.

Conducted at the Royal Adelaide Hospital from November 2021 to May 2022.

Central Adelaide Local Health Network Human Research Ethics Committee approval (No.16377), with a waiver of consent.

Participants

Inclusion Criteria

- Inpatient admitted to Royal Adelaide Hospital COVID Unit
- Confirmed COVID-19 infection and
- A diagnosis of oropharyngeal dysphagia and
- A recipient of speech pathology intervention for dysphagia during their COVID-19 hospital admission.

Exclusion Criteria

- A diagnosis of oesophageal dysphagia in the absence of oropharyngeal dysphagia
- Speech pathology input required only for the purpose of reinstatement of baseline texture modified diet and/or thickened fluids i.e. no acute speech pathology intervention or assessment required.

Data

A participant list was extracted from Electronic Medical Records (EMR) by filtering for Speech Pathology and hospital admission under the COVID Unit. Documentation was screened to identify participants meeting the inclusion criteria.

Data were collected on patient demographics, reason for hospital admission, ICU versus ward-based care, oxygen therapy, aetiology, nature and severity of dysphagia, diet and fluid recommendations at baseline and on discharge from hospital and discharge destination.

Data were analysed using descriptive statistics.

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Results

Figure 1. Flowchart of participants

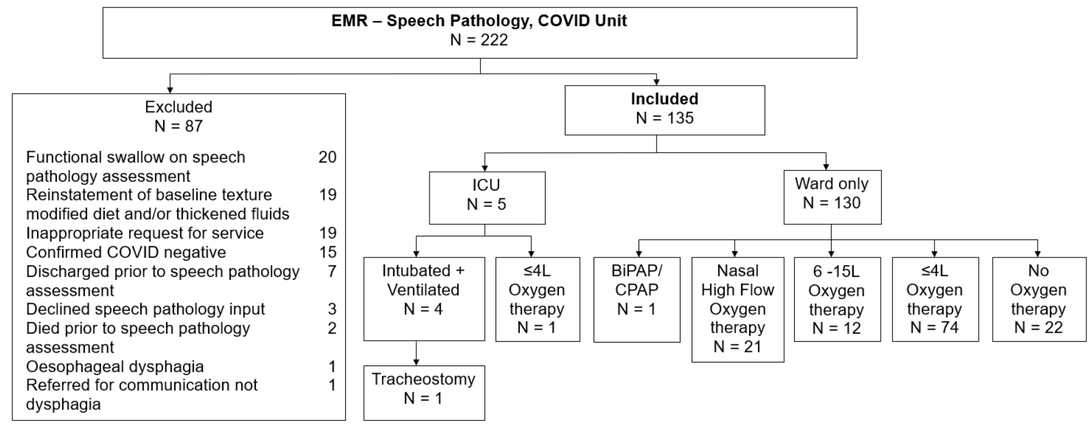

Table 1. Characteristics of participants

Participant Characteristic	n = 135	percentage (%)
Gender		
Male	80	59
Female	55	41
Age (years)		
Range	48 - 103	
Median	83	
Admission reason		
COVID-19 (Medical)	119	88
COVID-19 (Social)	1	1
Not COVID-19	15	11
Length of hospital stay (days)		
Range	1 - 69	
Median	10	
Admit from		
Home	48	36
Residential aged care facility	64	47
Supported disability accommodation	6	4
Inter-hospital transfer	17	13
Discharge destination		
Home	26	19
Residential aged care facility	61	45
Supported disability accommodation	8	6
Inter-hospital transfer	3	2
Sub-acute care/rehabilitation	11	8
Hospice	1	1
Died in hospital	25	19

Acute or acute on chronic oropharyngeal dysphagia was diagnosed in 93% of participants.

COVID-19 illness was identified as an aetiology of dysphagia in 92% of the participants with an acute deterioration in swallow function.

Table 2. Diet and fluid outcomes at discharge for participants who were not intubated and ventilated

Discharge Outcome	No Oxygen Therapy N = 22 (%)	≤ 4L Oxygen Therapy N = 75 (%)	6 – 15L Oxygen Therapy N = 12 (%)	Nasal High Flow Oxygen Therapy N = 21 (%)	BiPAP/CPAP N = 1 (%)
Discharged on baseline diet and fluids	2 (9%)	10 (13%)	-	-	1 (100%)
Discharged on downgraded diet (baseline fluids)	10 (46%)	25 (33%)	5 (42%)	7 (33%)	-
Discharged on downgraded fluids (baseline diet)	-	3 (4%)	-	-	-
Discharged on downgraded diet and fluids	8 (36%)	33 (44%)	7 (58%)	11 (52%)	-
Discharged on upgraded diet and/or fluids	-	2 (3%)	-	-	-
Discharged on downgraded diet and upgraded fluids	-	-	-	1 (5%)	-
Unable to determine baseline diet and/or fluids	2 (9%)	2 (3%)	-	2 (10%)	-

Conclusion

Acute oropharyngeal dysphagia is associated with COVID-19 illness in hospitalised adults, including those who have not been intubated and ventilated. Improving our understanding of dysphagia associated with COVID-19 illness will shape our approach to identification and management of dysphagia during the acute phase of COVID-19 illness and beyond.

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Contact

Christine Davis, Speech Pathologist, Royal Adelaide Hospital, Central Adelaide Local Health Network
Email: christine.davis@sa.gov.au

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