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Pneumomediastinum in COVID-19: a phenotype of severe COVID-19 pneumonitis? The results of the UK POETIC survey

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Roughly 0.6% of patients admitted with COVID-19 have pneumomediastinum identified. The finding is associated with severe COVID-19 and high mortality. <https://bit.ly/3nXlaR5>

Cite this article as: Melhorn J, Achaiah A, Conway FM, *et al.* Pneumomediastinum in COVID-19: a phenotype of severe COVID-19 pneumonitis? The results of the UK POETIC survey. *Eur Respir J* 2022; 60: 2102522 [DOI: 10.1183/13993003.02522-2021].

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Received: 19 Sept 2021
Accepted: 12 Jan 2022

Abstract

Background There is an emerging understanding that coronavirus disease 2019 (COVID-19) is associated with increased incidence of pneumomediastinum (PTM). We aimed to determine its incidence among patients hospitalised with COVID-19 in the UK and describe factors associated with outcome.

Methods A structured survey of PTM and its incidence was conducted from September 2020 to February 2021. UK-wide participation was solicited *via* respiratory research networks. Identified patients had severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and radiologically proven PTM. The primary outcomes were to determine incidence of PTM in COVID-19 and to investigate risk factors associated with patient mortality.

Results 377 cases of PTM in COVID-19 were identified from 58 484 inpatients with COVID-19 at 53 hospitals during the study period, giving an incidence of 0.64%. Overall 120-day mortality in COVID-19 PTM was 195 out of 377 (51.7%). PTM in COVID-19 was associated with high rates of mechanical ventilation. 172 out of 377 patients (45.6%) were mechanically ventilated at the point of diagnosis. Mechanical ventilation was the most important predictor of mortality in COVID-19 PTM at the time of diagnosis and thereafter ($p<0.001$), along with increasing age ($p<0.01$) and diabetes mellitus ($p=0.08$). Switching patients from continuous positive airway pressure support to oxygen or high-flow nasal oxygen after the diagnosis of PTM was not associated with difference in mortality.

Conclusions PTM appears to be a marker of severe COVID-19 pneumonitis. The majority of patients in whom PTM was identified had not been mechanically ventilated at the point of diagnosis.

