**FA 7030 Data tables**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Author;**  **Year Published**  **(References)** | **Study Type** | **Setting** | **Population** | **Intervention** | **Comparison** | **Outcomes** | **Results/Key findings** |
| Austin, M. and R. Wood-Baker, *Oxygen therapy in the pre-hospital setting for acute exacerbations of chronic obstructive pulmonary disease.* Cochrane Database Syst Rev, 2006(3): p. Cd005534. | Systematic review of randomized controlled trials (RCTs) | Pre- hospital | Acute exacerbation of Chronic obstructive pulmonary disease (AECOPD) | High flow oxygen | “Controlled” oxygen | Mortality from respiratory causes *Secondary outcomes* 1. All causes mortality 2. Dyspnea score 3. Arterial blood gas (ABG)  4. Length of stay (LOS) 5. ICU admission 6. Mental status score 7. Consciousness score (i.e., GCS)  8. Invasive ventilation 9. Noninvasive ventilation 10.Lung function 11.Illness score | Only 2 RCTs were identified and were ongoing with no results published at the time of the review |
| Austin, M.A., et al., *Effect of high flow oxygen on mortality in chronic obstructive pulmonary disease patients in prehospital setting: randomised controlled trial.* BMJ, 2010. 341: p. c5462 | Cluster randomized trial | Pre-hospital | COPD, including AECOPD | Oxygen titrated to saturations of 88-92% | High flow oxygen | Mortality | Titrated oxygen treatment significantly reduced mortality, hypercapnia, and respiratory acidosis compared with high flow oxygen in acute exacerbations of chronic obstructive pulmonary disease. |
| Wijesinghe M, et al.  Pre-hospital oxygen therapy in acute exacerbations of chronic obstructive pulmonary disease. *Intern Med J.* 2011. Nov 618-622 PMID: 20214690) | Retrospective observational | Pre-hospital | AECOPD | Oxygen administration per 1 liter per minute increase in flow | Oxygen administration with oxygen flow 1 liter per minute lower | Death, required assisted ventilation or in respiratory failure | Of 250 patients 10 (4%) died, and 77 (31%) died, required assisted ventilation or were in  respiratory failure. Increased oxygen flow was associated with increasing risk of death,  assisted ventilation or respiratory failure with an odds ratio (OR) of 1.2 (95% CI 1.0–1.4) per 1 L/min oxygen flow. Increasing PaO2 was associated with a greater risk of a poor  outcome with an OR of 1.1 (95% CI 1.0–1.3) per 10 mmHg higher PaO2. |
| Cameron, L., et al., *The risk of serious adverse outcomes associated with hypoxaemia and hyperoxaemia in acute exacerbations of COPD.* Postgrad Med J, 2012. 88(1046): p. 684-9. | Retrospective observational | Pre-hospital | AECOPD | Oxygen saturation on ABG within 4 hours of arrival in ED <88% or >96% | Oxygen saturation on ABG within 4 hours of arrival in ED 88-96% | Composite measure hypercapnic respiratory failure, assisted ventilation or inpatient death | PaO2 on ABG within 4 hours of arrival of <88%, 88-96% and >96% in patients brought to hospital by EMS and found a hazard ratio (HR) of 9 for saturation >96% and 2 for saturations <88% |
| Lumholdt, M., et al., *Pre-hospital oxygen therapy and CO2 retention in patients admitted through the emergency department.* BMJ Open, 2017. 7(Supplement 3): p. A8. | Retrospective observational | Pre-hospital | Patients brought to Emergency Department (ED) with “respiratory conditions” | CO2 retention | No CO2 retention | Not applicable (N/A) | 111 patients with respiratory conditions brought to ED by EMS and found to have acidosis and CO2 retention. They found the 11 patients with CO2 retention had a mean oxygen saturation of 84% on presentation to EMS and 95% on arrival in ED. They inferred this was due to excessive oxygen administration before arrival in hospital |
| Bentsen, L.P., et al., *A change from high-flow to titrated oxygen therapy in the prehospital setting is associated with lower mortality in COPD patients with acute exacerbations: an observational cohort study.* Acute Med, 2020. 19(2): p. 76-82. | Retrospective observational | Pre-hospital | COPD transported to hospital by Emergency Medical Services (EMS) | Oxygen saturations 88-92% in care of EMS | Oxygen saturations >92% in care of EMS | 30-day mortality | 30-day mortality of 707 patients with COPD brought to hospital with either high flow or oxygen titrated to saturations of 88-92%. They found a relative risk (RR) of 4 for 30-day mortality for high flow oxygen in 178 with acute exacerbation of COPD, but no significant difference in the whole group with COPD They noted differences from Austin et al due to different patient groups. |
| Barnett, A., et al., *Thoracic Society of Australia and New Zealand Position Statement on Acute Oxygen Use in Adults: 'Swimming between the flags'.* Respirology, 2022. 27(4): p. 262-276. | Guideline | Pre and in hospital | COPD | N/A | N/A | N/A | Key recommendations relevant to the current PICOST are: assess oxygenation, oxygen requires prescription and to set oxygen saturation targets of 88-92% for potential hypercapnia, 92-96% for others |

Abbreviations:

AECOPD acute exacerbation of COPD

CO2 carbon dioxide

COPD chronic obstructive pulmonary disease

ED emergency department

EMS emergency medical services

HR hazard ratio

ICU intensive care unit

LOS length of stay

N/A not applicable

RCT randomized controlled trial

RR relative risk