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Preventing asthma deaths: interventions for people with asthma-COPD overlap syndrome (ACOS)

Cochrane Airways Scoping Search Report

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Introduction to the scoping search report

This scoping search report describes the methods and results of scoping activities undertaken by Cochrane Airways on interventions for people who have asthma-COPD overlap syndrome.

Interventions to prevent asthma deaths was identified as a priority by the Cochrane Airways Priority Setting Group (CAPSG) as part of the Cochrane Airways 'whole of scope' priority setting exercise conducted in 2019/2020. Asthma-COPD overlap syndrome was identified as a factor in asthma-associated deaths in the 2014 National Review of Asthma Deaths.

This scoping search report does not attempt to appraise or synthesise the included studies. It provides a summary of the existing evidence on this topic.

Purpose

The purpose of this scoping search report is:

- to assess what evidence exists for this topic
- to inform the development of future Cochrane Review titles
- to provide a transparent record of scoping work undertaken by Cochrane Airways

Study inclusion criteria

Population: people with asthma-COPD overlap syndrome

Intervention: any

Comparator: any

Outcomes: any

Study design: Reviews, randomised controlled trials (RCTs), quasi-RCTs

Literature search

A limited literature search was conducted to identify relevant systematic reviews and trials. A search of the [Cochrane Airways Trials Register](#) and CENTRAL was conducted to identify relevant RCTs and quasi-RCTs, and [Epistemonikos](#) was searched to identify systematic reviews. The search strategy can be found in the [appendix](#). The search was conducted on 5th May 2020.

Assessment of search results

The database search for RCTs retrieved 42 references after duplicates were removed. The search for systematic reviews retrieved 7 references. One member of the Cochrane Airways team (LS) screened the titles and abstracts using the Cochrane Register of Studies triage function, and checked full-text if necessary.

Included studies

The search identified 2 related systematic reviews and 7 RCTs (8 references). The reviews and studies are summarised in **Table 1** and **Table 2**. The primary reference for each study is listed in the [References](#) section.

Table 1: Summary of reviews

Study ID	Review type	Registration	Population	Intervention/theme	Outcome(s)	No. included studies
Amegadzie 2019	Systematic review of interventions	PROSPERO: CRD42018090863	Patients with asthma-COPD overlap	<ul style="list-style-type: none">• LABA• ICS• LABA/ICS	Death; hospitalization, myocardial infarction; lung function; exacerbations	10
Mostafavi-Pour-Manshadi 2018	Scoping review		Patients with asthma-COPD overlap	FENO measurement	Modifying factors in FENO measurement; FENO in COPD compared with healthy subjects; FENO in ACOS compared with COPD; FENO and disease severity/progression; FENO and biomarkers; FENO and treatment response	38

Table 1: Summary of studies

Study ID	Trial Registration	Population	Intervention(s)	Comparator	No. participants randomized	Country	Status
Xu 2019		Patients with ACOS	inhaled glucocorticoid combined with tiotropium bromide	inhaled glucocorticoid	86	China	Complete
Ishiura 2015	UMIN000014191	Patients with ACOS	Once-daily fluticasone furoate/vilanterol	Twice-daily fluticasone furoate/vilanterol	16	Japan	Complete
	NCT03695276	Patients with COPD, asthma, and asthma-COPD overlap syndrome (ACOS)	Pulmonary specialist-health coach consultation (PushCon) model	Usual care	Not yet recruiting Target= 360 patients	USA	Not yet recruiting
	UMIN000026651	Patients with ACOS	Budesonide/Formoterol plus Glycopyrronium	No treatment	Target=15	Japan	Preinitiation
	UMIN000021086	Patients with ACOS	Fluticasone furoate/vilanterol plus Umeclidinium	Fluticasone furoate/Vilanterol	Target=20	Japan	Preinitiation
	UMIN000016135	Patients with ACOS	Leukotriene receptor antagonist	Placebo	Target=20	Japan	Preinitiation
	EUCTR2015-002046-31-ES	Patients with ACOS	Fluticasone propionate / formoterol fumarate	Indacaterol maleate / glycopyrronium bromide	Target=130	Multi-centre	Complete

References

Systematic reviews

Amegadzie JE, Gorgui J, Acheampong L, Gamble JM, Farrell J, Gao Z. Comparative Safety and Effectiveness of Inhaled Bronchodilators and Corticosteroids for treating Asthma-COPD Overlap: a Systematic Review and Meta-Analysis *Journal of asthma* **2019**; ; 1-18

Mostafavi-Pour-Manshadi SM, Naderi N, Barrecheguren M, Dehghan A, Bourbeau J. Investigating Fractional Exhaled Nitric Oxide in Chronic Obstructive Pulmonary Disease (COPD) and Asthma-COPD Overlap (ACO): a Scoping Review *Copd: journal of chronic obstructive pulmonary disease* **2018**; 15 (4) ; 377-391

Randomized controlled trials

Xu H, Lu X. Inhaled glucocorticoid with or without tiotropium bromide for asthma-chronic obstructive pulmonary disease overlap syndrome *Journal of the College of Physicians and Surgeons--Pakistan : JCPSP* **2019**; 29 (3) ; 249-252

Ishiura Y, Fujimura M, Shiba Y, Ohkura N, Hara J, Kasahara K. A comparison of the efficacy of once-daily fluticasone furoate/vilanterole with twice-daily fluticasone propionate/salmeterol in asthma-COPD overlap syndrome *Pulmonary pharmacology & therapeutics* **2015**; 35; 28-33

NCT03695276. Pulmonary specialist-health coach consult model pilot

<https://clinicaltrials.gov/show/nct03695276> **2018**

UMIN000026651. Efficacy of Glycopyrronium added to Budesonide/Formoterol in patients with Asthma-COPD overlap syndrome <http://www.who.int/trialsearch/Trial2.aspx?TrialID=JPRN-UMIN000026651> **2017**

UMIN000021086. A comparison of the additive efficacy of Umeclidinium bromide on fluticasone furoate/vilanterole in asthma-COPD overlap syndrome

<http://www.who.int/trialsearch/Trial2.aspx?TrialID=JPRN-UMIN000021086> **2016**

UMIN000016135. Role of leukotriene in patients with asthma-COPD overlap syndrome (ACOS)

<http://www.who.int/trialsearch/Trial2.aspx?TrialID=JPRN-UMIN000016135> **2015**

EUCTR2015-002046-31-ES. A research study to compare two treatments for treating a respiratory disease known as asthma-COPD overlap syndrome (ACOS)

<http://www.who.int/trialsearch/Trial2.aspx?TrialID=EUCTR2015-002046-31-ES> **2016**

Appendix: Database search strategies

Cochrane Airways Register of Trials & CENTRAL (via The Cochrane Register of Studies)

- #1 ACOS:ti,ab
- #2 ((asthma-COPD or asthma-chronic obstructive pulmonary disease) and ("overlap syndrome" or overlap-syndrome)):ti,ab
- #3 MESH DESCRIPTOR Asthma-Chronic Obstructive Pulmonary Disease Overlap Syndrome EXPLODE ALL
- #4 #1 OR #2 OR #3

Epistemonikos

Search terms: asthma-COPD overlap