Healthcare resource utilization and costs in patients experiencing severe cardiac events following a COPD exacerbation: results from EXACOS-CV studies in Spain, Germany, the Netherlands and Canada

RWD25

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Why did we perform this research?

- Exacerbations of COPD increase the cardiopulmonary risk of patients,[1,2] however the HCRU associated with this increased risk is unknown.
- The EXACOS-CV programme is a set of studies using secondary collected data investigating the relationship between exacerbations of COPD and the risk of a CV event in a real-world setting.[3]
- **Objective:** To describe CV hospitalizations and the related costs in patients who experienced a severe CV event following moderate or severe exacerbation of COPD.

E-poster

Supplementary material

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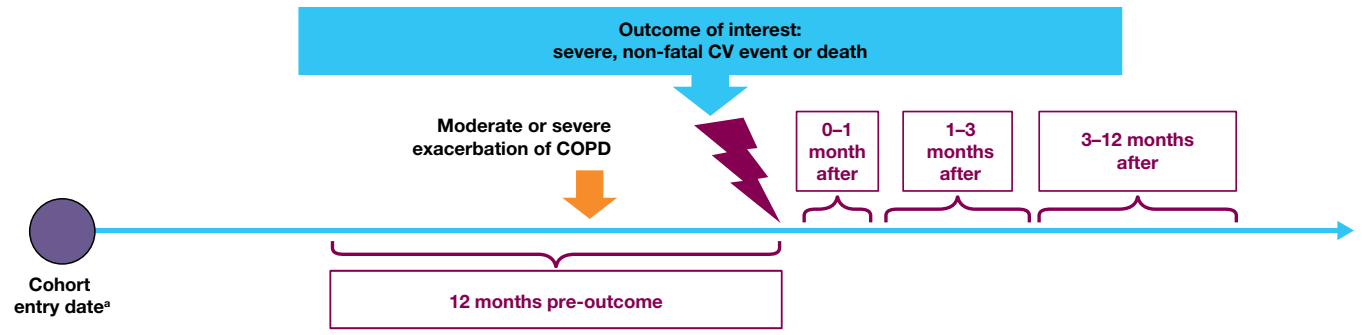
How did we perform this research?

- Included patients with COPD ⩾40 years of age who were identified in secondary databases in Canada, Germany, Spain and the NL, from 2014–2018.
- Patients who had a non-fatal CV event (hospitalization for acute coronary syndrome, heart failure, stroke or arrhythmias) or who died within the 12 months following an exacerbation of COPD, were selected.
- CV-related, respiratory-related, and all-cause hospitalizations were described during the 12 months pre-outcome and the 0–1, >1–3 and >3–12 months post-outcome.
- The respective across-country costs per capita were computed in the 12 months pre- and post-outcome.

Study design

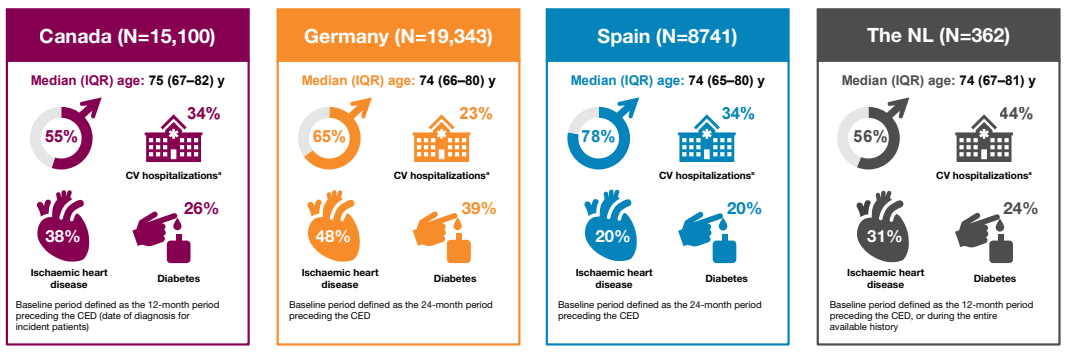
HCRU in patients with an outcome of interest (first severe, non-fatal CV event or death [lightning bolt]) after the cohort entry date (purple circle), and preceded by an exacerbation of COPD (orange arrow) in 12 months prior to the outcome of interest



[a]The date of the identified COPD diagnosis.

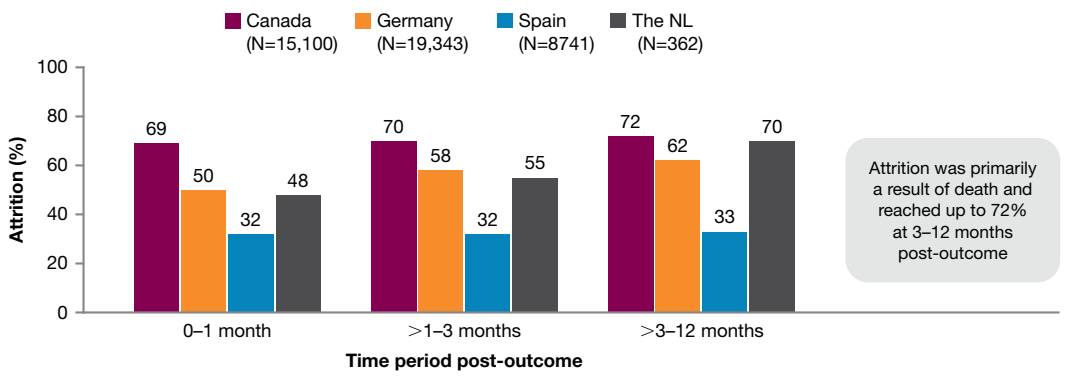
What did we find?

Figure 1. Baseline characteristics



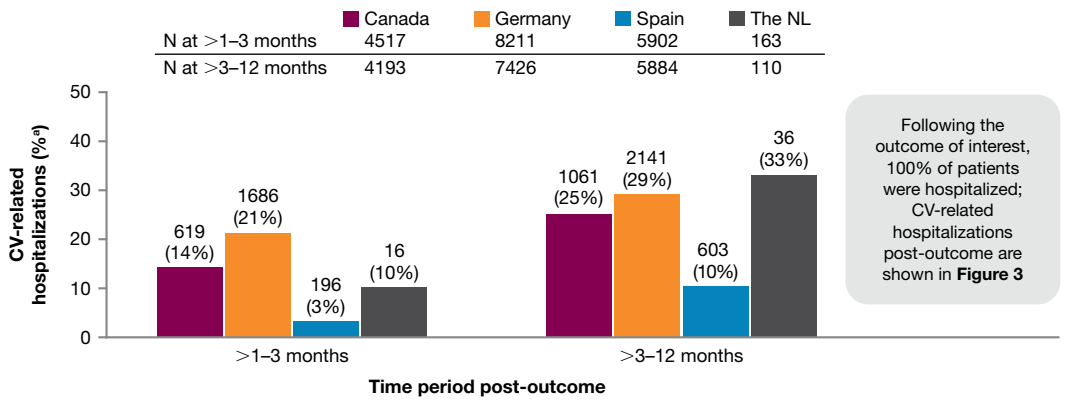
♂ = % male. a% CV hospitalizations in the 12 months pre-outcome.

Figure 2. Attrition rates post-outcome



Attrition was primarily a result of death and reached up to 72% at 3–12 months post-outcome

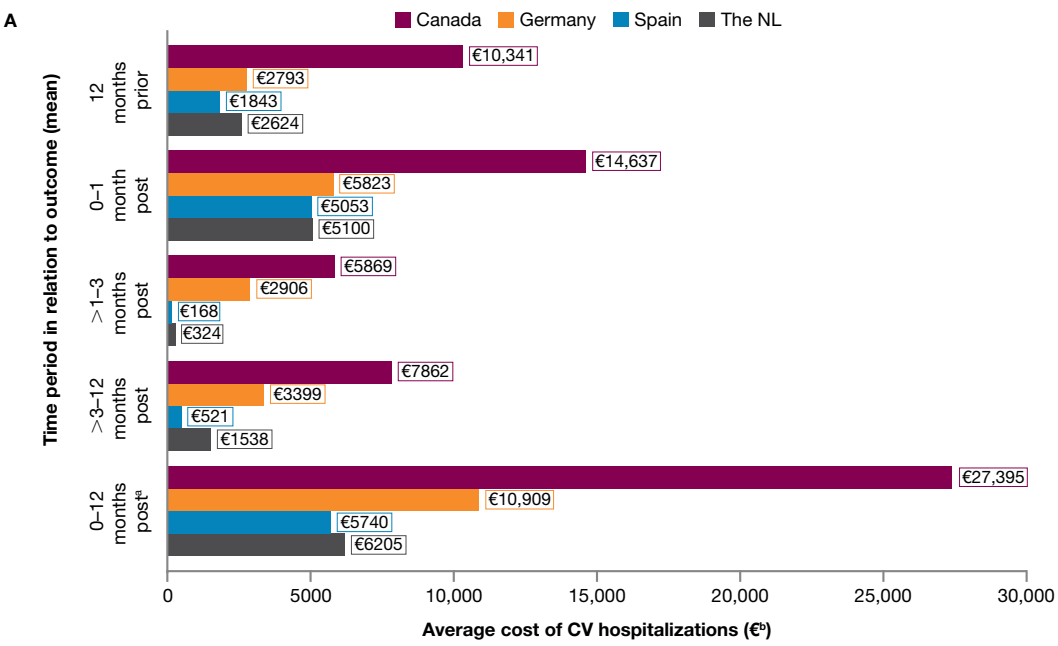
Figure 3. CV-related hospitalizations post-outcome

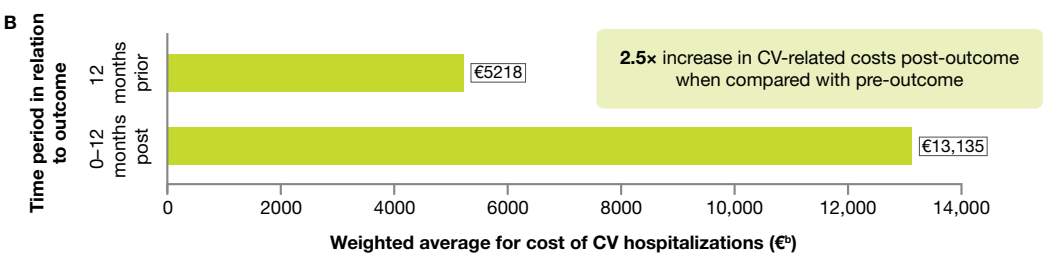


Following the outcome of interest, 100% of patients were hospitalized; CV-related hospitalizations post-outcome are shown in **Figure 3**

[a]% of patients selected from secondary databases for this study and remaining alive per country.

Figure 4. Cost of CV hospitalizations pre- and post-outcome by A) country and B) weighted average





2.5× increase in CV-related costs post-outcome when compared with pre-outcome

[a]Total estimated using data from respective time intervals except Canada. [b]1€=1.3976 CAD.[4]

The increase in average cost of CV hospitalizations 12 months post-outcome (weighted average: €13,135, range: €5740–€27,395 compared with 12 months pre-outcome (weighted average: €5218, range: €1843–€10,341) was due to both outcome-related hospitalization and re-hospitalizations (**Figure 4a**)

Similar trends were seen for all-cause hospitalizations (**Supplementary Table 1**)

The average number of CV hospitalizations and length of stay was higher in the 12 months post-outcome compared with 12 months pre-outcome (**Supplementary Table 2**)

The average cost of COPD-related hospitalization was higher in the 12-month pre-outcome period due to moderate or severe exacerbations of COPD compared with the post-outcome period (**Supplementary Table 3**). The selection criteria are likely to contribute to this, as severe COPD exacerbations in the 12 months prior to the CED would drive these costs

How might this impact current clinical practice?

- **Severe CV events increased HCRU and costs in exacerbating COPD patients, namely due to cardiac hospitalizations post-outcome.**
- **These findings highlight the economic burden incurred by increased cardiopulmonary risk in COPD following an exacerbation and the need for prevention of exacerbations to reduce the cardiopulmonary burden.**

Abbreviations

CAD, Canadian dollar; **CED**, cohort entry date; **COPD**, chronic obstructive pulmonary disease; **CV**, cardiovascular; **EXACOS**, Exacerbations of COPD and their Outcomes; **HCRU**, healthcare resource utilization; **IQR**, interquartile range; **NL**, Netherlands; **y**, years.

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Disclaimer

This study is based in part by data provided by Alberta Health and Alberta Health Services. The interpretation and conclusions are those of the researchers and do not represent the views of the Government of Alberta. Neither the Government of Alberta nor Alberta Health express any opinion in relation to this study.

Disclosures

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