Acceptance code EE480

Healthcare Resource Utilization and Costs Related to Pertussis in Adults With and Without Underlying Conditions: A German Claims Data Analysis

Pertussis leads to **increased healthcare related costs** both during **infection** and in **subsequent months**.

Digital poster
Supplemental data

SCAN ME

Julian Witte[1], Bastian Surmann[1], Manuel Batram[1], Victoria Genovez[2], Maria Waize[3], Alexander F. Heiseke[3], Pavo Marijic[3]

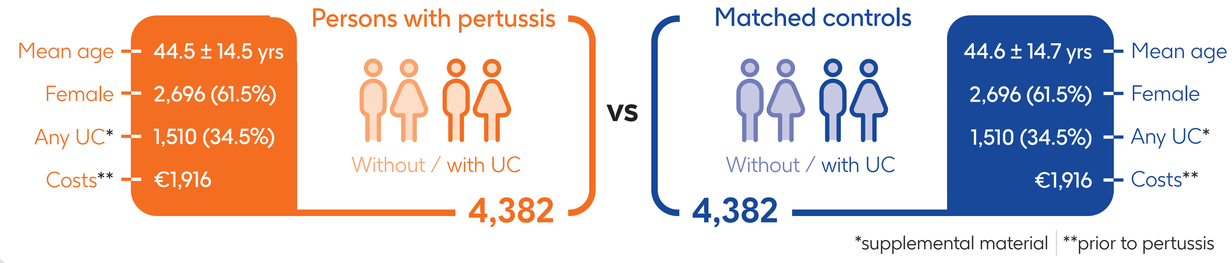
[1]Vandage GmbH, Bielefeld, Germany; [2]Amaris Consulting, Lisbon, Portugal, c/o GSK Wavre; [3]GSK, Munich, Germany

Aims

In the German adult population with and without underlying condition (UC):

- Calculate health care resource utilization (HCRU) and costs in **patients with pertussis**.
- Compare observed HCRU and costs with **persons without pertussis infection**.

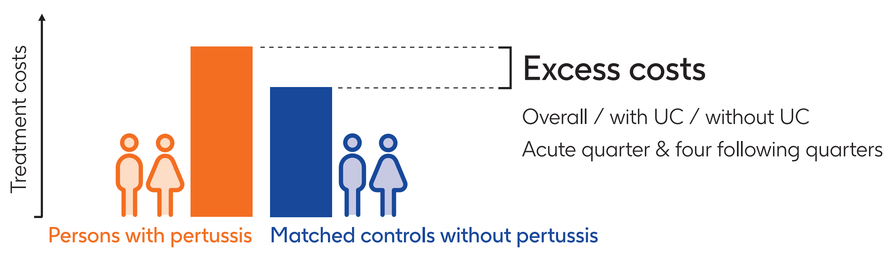
Demographics



*supplemental material | **prior to pertussis

Study Design

- Retrospective cohort study using German statutory health insurance claims data.
- **Years under study:** 2016-2019. Data from 2015 is used as a washout period to ensure that pertussis cases in 2016 are incident cases.
- **Outcomes:** Excess HCRU and costs related to medication, inpatient hospital visits and outpatient physician contacts. Given the matching approach, any excess was attributed to pertussis infection or a deterioration of the UC due to pertussis.
- **Observational period:** Acute quarter of pertussis and four follow-up quarters.



Identification of patients

Pertussis patient identification and UC definitions are based on ICD-10 codes*.

Eligibility criteria

≥ 18 years old
Continuous enrollment with health insurance over three years.

Exact 1:1 matching*

Age, Sex, UCs (prior to pertussis), and overall costs in the year prior to pertussis (+/- 10%).

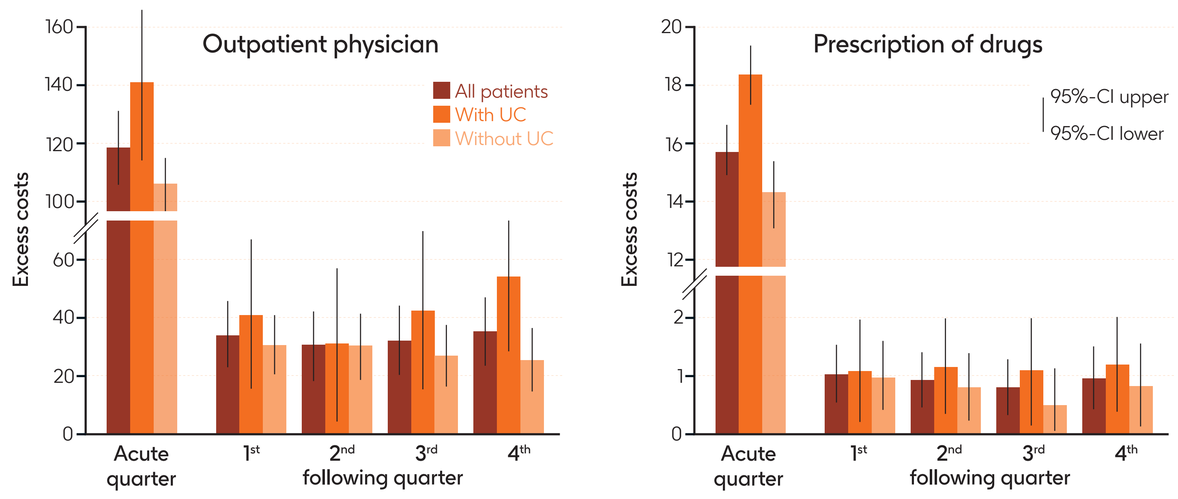
Database

- GWQ ServicePlus AG (anonymized database including data from multiple mid-size German public statutory health insurers (SHI)).
- Claims data of up to 6.3 million insured people, depending on the year (5%-6% of the total SHI population in Germany per year).

*supplemental material

Results

Excess costs during the acute quarter and the subsequent four quarters following a pertussis infection (in €)*



Note: Shown values of excess costs for outpatient physician and prescription of drugs are significant with p-values ranging from <0.03 to <0.0001.

Hospitalization costs of pertussis infection, primary diagnoses (in €)

Sector	Population	Cases	Mean	SD	Median	Min.	Max.
Inpatient	Overall	49	2,761.42	1,055.09	2,716.80	1,319.94	9,205.35
	With UC	30	2,954.97	1,261.61	2,843.18	1,438.38	9,205.35
	Without UC	19	2,466.00	527.56	2,545.05	1,319.94	3,266.69

Length of hospitalization (LOS) in patients with pertussis, primary diagnosis (in days)

Sector	Population	Cases	Mean	SD	Median	Min.	Max.
Inpatient	Overall	49	5.6	3.7	4	1	15
	With UC	30	6.3	3.4	6	2	14
	Without UC	19	4.5	4.0	3	1	15

*supplemental material

Background

- Pertussis is a contagious bacterial respiratory infection impacting individuals of all ages, particularly adults and those with UC.
- Current evidence suggests that 50+ patients and those with certain UCs, i.e., chronic illnesses, are at higher risk of hospitalization and complications from pertussis[1,2].
- Yet, little is known about the economic effects of pertussis.

Conclusions

Pertussis leads to **increased healthcare service utilization** not only **during the infection** but also in **subsequent months**.

These costs remain high over a prolonged period with an increase **in patients with UC**.

Direct **hospital costs** related to pertussis and **LOS** were also **higher in patients with UC**.

Abbreviations

CI: Confidential interval; HCRU: Health care resource utilization ICD-10: ICD-10: International Classification of Diseases 10th Revision; LOS: Length of stay; Max.: Maximum; Min.: Minimum; SD: Standard deviation; SHI: Statutory health insurer; UC: Underlying condition

References

1. Jenkins VA, Savic M, Kandeil W. Pertussis in high-risk groups: an overview of the past quarter-century. *Hum Vaccin Immunother* 2020; 16(11): 2609-17 [https://doi.org/10.1080/21645515.2020.1738168] [PMID: 32298213]
2. Macina D, Evans KE. Pertussis in Individuals with Co-morbidities: A Systematic Review. *Infect Dis Ther* 2021; 10(3): 1141-70 [https://doi.org/10.1007/s40121-021-00465-z] [PMID: 34117998]

Disclosures

Funding: GSK (GSK study identifier: VEO-000174)
Conflicts of interest and acknowledgements: see supplementary material (QR-code).

ISPOR Europe 2024 | 17-20 November 2024 | Barcelona, Spain

Presenting author:Julian Witte, julian.witte@vandage.de

GSK