



Chronic obstructive pulmonary disease (COPD) in ambulatory care in Germany—Temporal trends and small-area variations

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Abstract

Background

Chronic obstructive pulmonary disease belongs to one of the frequent chronic diseases worldwide. Prevalence estimates vary in Germany from study to study between 1% and 22%. The aims of the current study were to estimate the diagnostic prevalence of COPD in Germany and examine temporal trends and small-area variations in COPD prevalence based on the full set of ambulatory claims data.

Methods

Nationwide ambulatory claims data from the years 2009 to 2017 were used in this study. The study population comprised adults over 40 years ($N = 40,481,657$ in 2017). Patients were considered to have COPD if the ICD-10 diagnosis J44.- “Other chronic obstructive pulmonary disease” was coded in at least two quarters of a year (the so-called M2Q criterion). The raw as well as the sex- and age-standardized diagnostic prevalence was calculated. Small-area variations were assessed for rural and urban districts ($n = 402$). The Global and Local Moran’s I were used to examine spatial autocorrelation and spatial clusters, respectively.

Results

The sex- and age-standardized diagnostic prevalence for the year 2009 was 5.1%. The prevalence increased constantly over the observation period to 6.4% in 2016 and remained at a similar level in 2017. The prevalence varied by the factor of 2 across regional Associations of Statutory Health Insurance Physicians with 4.6% in Baden-Württemberg and 8.4% in Berlin. The Global Moran’s I showed the presence of moderate to strong spatial autocorrelation ($0.57, p < 0.0001$). A large cluster with low prevalence was observed nearly in whole Baden-Württemberg and in the southern part of Bavaria. Smaller clusters with high prevalence were found in several federal states, including Lower Saxony, Saxony-Anhalt, Thuringia, North Rhine-Westphalia and Rhineland-Palatinate.

Conclusion

COPD represents a substantial public health problem affecting approx. 2.6 million statutory health insurants in 2017 in Germany. The diagnostic prevalence showed a rising trend from 2009 to 2016 and evidence of stagnation thereafter. The further development remains to be seen. However, it is likely that the prevalence will continue to grow given the increasing life expectancy and ageing population in Germany.



Keywords

Adults, chronic obstructive pulmonary disease, COPD, diagnostic prevalence, Germany, small-area variations, spatial autocorrelation, spatial clusters, temporal trends

Citation

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