

Impact of Positive Airway Pressure (PAP) Therapy on Healthcare Costs in Obstructive Sleep Apnea (OSA): Analysis of a German Healthcare Database

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BACKGROUND AND RATIONALE

Worldwide, OSA is reported to affect nearly 1 billion adults aged 30-69 years, making it a common condition with increased morbidity and mortality (1-3).

The rate of several significant cardiovascular, cerebrovascular and metabolic comorbidities is increased in the presence of OSA, resulting in a high burden on healthcare systems (4).

Therefore, there is a need for real-world data from larger groups of representative patients in routine clinical practice to better understand the potential impact of PAP therapy on healthcare resource utilization (HCRU).

This study analyses HCRU and costs in patients with OSA from a German statutory health insurance database, offering critical insights for healthcare policymakers and providers.

METHODS

OSA patients were selected from an anonymised German health insurance claims database, containing data on approximately 4.8 million insured persons from 2015 to 2020.

Treatment-naïve patients were included if they had claims for PAP devices after a specific sleep apnea evaluation (polygraphy (PG) and polysomnography (PSG)) and at least one claim for an OSA diagnosis without prior therapy. For the untreated control group, patients with newly diagnosed OSA after polygraphy were eligible if they had not received PAP or any other OSA-specific treatment. Propensity scores (PS) were estimated using known OSA risk factors, as well as the most common comorbidities and medications, insurance status, region, and pre-index costs.

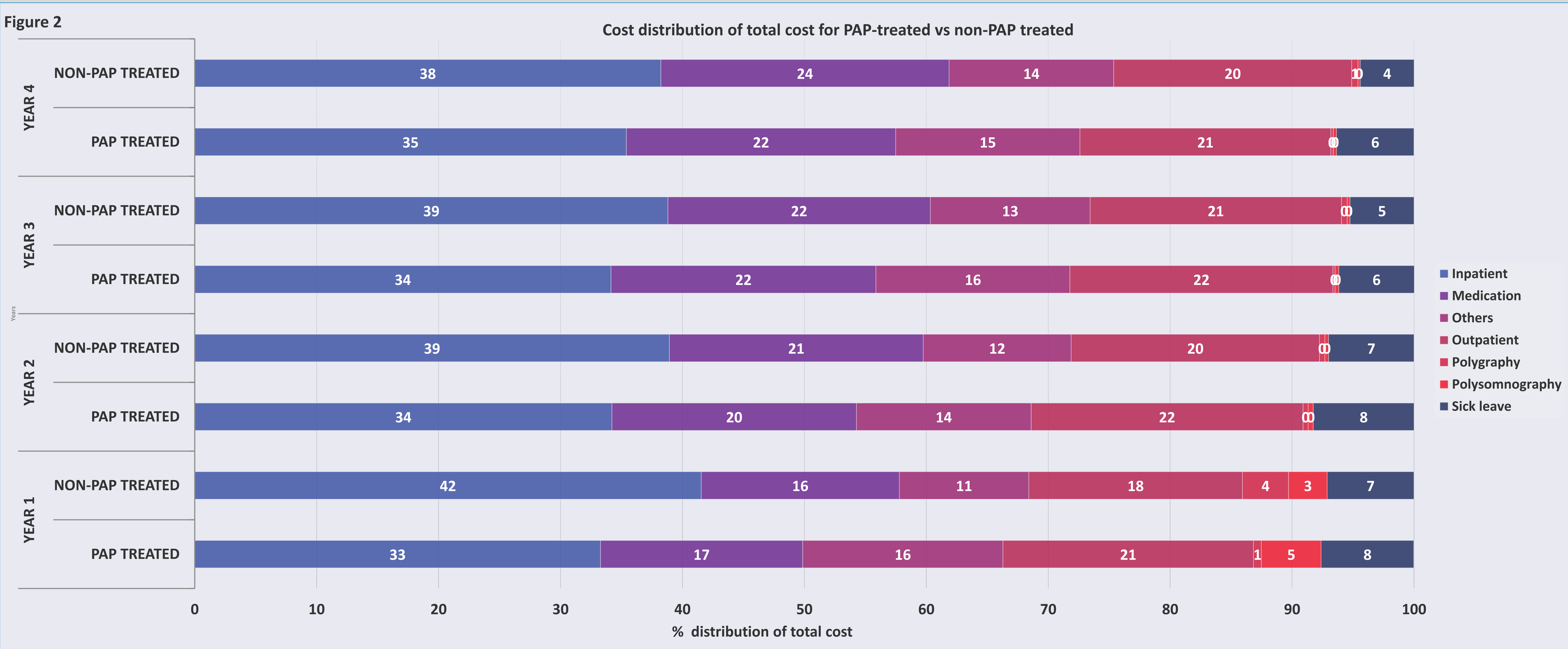
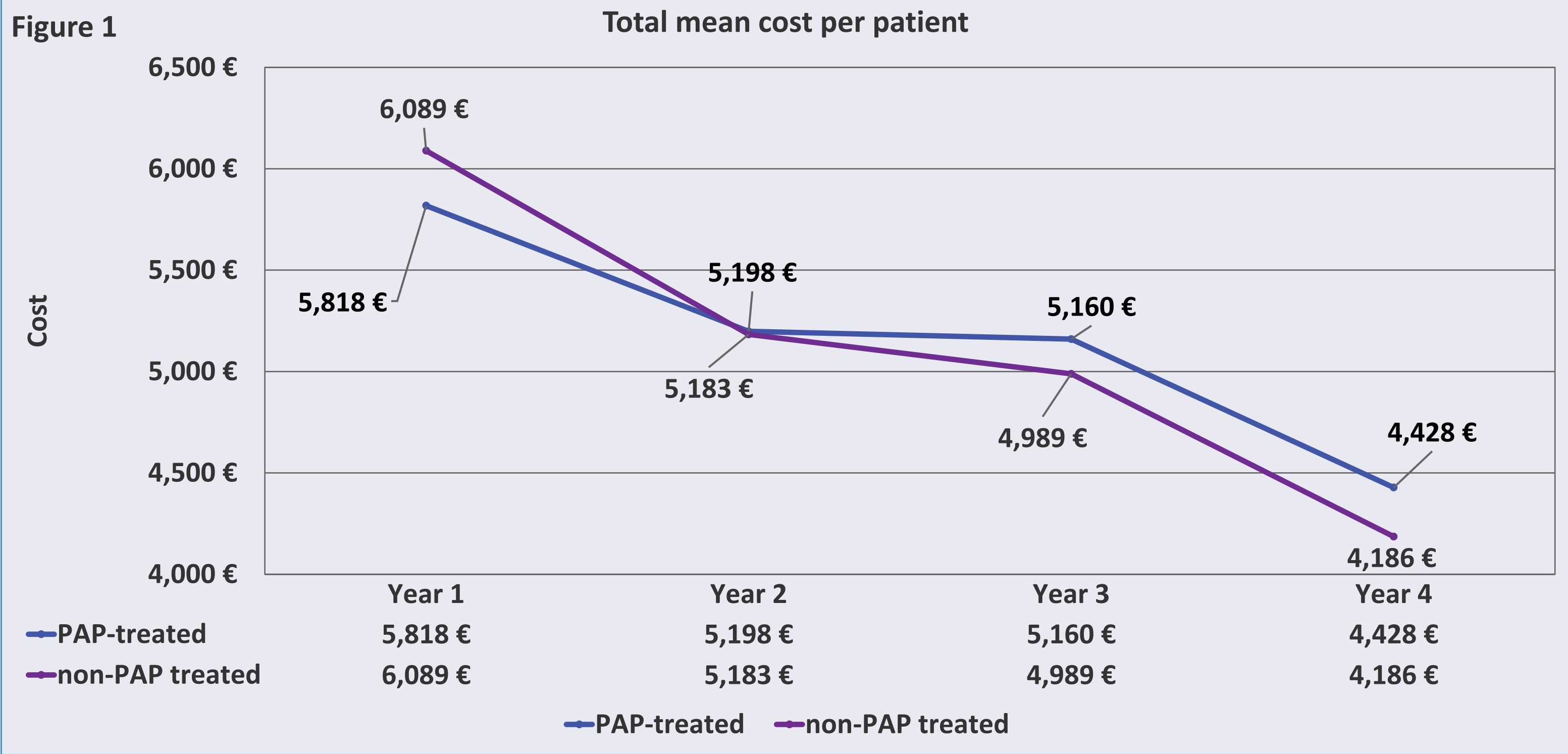
We compared HCRU between the two cohorts using 1:1 nearest neighbour matching based on estimated PS, age, and sex. Group comparisons were made using chi-squared tests with Yates' correction and a two-sided p-value of 0.05.

RESULTS

A total of 8,768 PAP-treated patients and 8,768 matched controls, with a mean age of 59 ± 13.1 years and 68.5% male, were included in the analysis.

Over a 4-year follow-up period, the average total costs per patient decreased in both groups: from €5,818 to €4,428 in the PAP group and from €6,089 to €4,186 in the non-PAP group, with no significant cost difference between the groups (Figure 1). Total costs included inpatient, outpatient, medication, sick leave, and other expenses (e.g., remedies, aids).

A breakdown of costs is presented in Figure 2. Notably, in each year, PAP-treated patients had a lower proportion of inpatient healthcare costs compared to non-PAP-treated patients: 33% vs. 42% in Year 1 and 35% vs. 38% in Year 4. Outpatient costs were slightly higher in the PAP-treated group. In Year 1 of follow-up, PG and PSG costs differed between the PAP and non-PAP groups: 1% vs. 4% for PG, and 5% vs. 3% for PSG, respectively



CONCLUSIONS

PAP treatment in OSA patients did not increase overall costs per patient. However, inpatient costs were lower among PAP-treated patients, suggesting that PAP therapy may optimize healthcare resource allocation in secondary care.

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