1. INTRODUCTION AND OBJECTIVES

- Pulmonary arterial hypertension (PAH) is a progressive and severely disabling disorder characterized by luminal narrowing in the small- and medium-sized pulmonary arteries, which leads to an increase in pulmonary vascular resistance and may culminate in right ventricular failure and premature death.

- Treprostinil is a prostacyclin analogue that reduces pulmonary arterial pressure through direct vasodilatation of the pulmonary and systemic arterial vascular beds and is indicated for the treatment of PAH.

- A recent retrospective analysis of a drug safety database showed that patients with PAH treated with higher treprostinil doses (either oral or parenteral) had lower hospitalization rates compared to lower doses.

- This analysis aims to estimate annual PAH-related hospitalization costs in patients treated with low, medium and high treprostinil doses in nine European countries (Belgium, France, Germany, Italy, Poland, Portugal, Spain, the Netherlands and the United Kingdom).

2. METHODS

- A cost model was developed to calculate hospitalization costs in patients with PAH who were treated with treprostinil at different doses:
  - Low dose: < 4.0 mg/day
  - Medium dose: 4.0–9.0 mg/day
  - High dose: > 9.0 mg/day

- Mean annual hospitalization costs per country were calculated using annual PAH-related hospitalization rates per dose and unit costs (local currency, 2021) from national databases or published literature. When not available, heart failure-related costs were considered, as it is the final PAH consequence.

- Subgroup analyses were performed by WHO functional class (FC), gender and disease etiology.

3. RESULTS

- PAH-related hospitalization rates for the overall population were 0.91 for low dose, 0.42 for medium dose, and 0.30 for high dose. Specific hospitalization rates for each subgroup were also gathered: 0.53–1.55 for low dose, 0.19–0.87 for medium dose and 0.14–0.56 for high dose (FIGURE 1).

- PAH hospitalization costs across countries ranged from €2,859 in Portugal to €9,314 in Belgium (TABLE 1).

- Mean annual PAH-related hospitalization costs per patient for the overall population were €1,507 (EBSS-2,794), €2,110 (€1,201-3,912) and €4,571 (€2,601-8,476) for high, medium and low dose, respectively, across all analyzed countries (FIGURE 4).

4. CONCLUSIONS

- Thus, hospitalization costs for high-dose patients were approximately 3 times lower than low-dose patients and 1.4 times lower than medium-dose patients (FIGURE 4).

- Results were consistent across subgroups, leading to cost savings in both genders, all etiologies (idiopathic or familial, collagen vascular disease and others), and WHO FC II and III (FIGURE 3).

- The greatest differences in costs per patient between high and low dose were observed in FIGURE 5:

- Thus, patients with higher doses of treprostinil resulted in lower hospitalization costs in comparison to those patients with low- and/or mid-dose.

- Therefore, an appropriate titration might lead to potential cost savings in different European settings.

- These results were consistent across subgroups in the analyzed European settings.

5. REFERENCES

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