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Real Option Value of Sotatercept in Pulmonary Arterial Hypertension: A Health Economic Perspective on Future Treatment Opportunities

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BACKGROUND

- Pulmonary arterial hypertension (**PAH**) is a **progressive**, **life-threatening** disease characterized by elevated pulmonary artery pressure and vascular resistance, leading to right heart failure and reduced survival.
- Despite advances in standard of care, many patients continue to experience significant morbidity and **mortality**, highlighting the need for **new treatment approaches**.
- **Sotatercept**, a novel therapeutic agent, offers a **new mechanism** of action targeting the **underlying** pathophysiology of PAH, with the potential to **improve** clinical **outcomes**, **survival** and functional class (**FC**)[1,2,3].
- The real option value (**ROV**) reflects the additional value patients and their care-givers place on surviving long enough to benefit from future medical innovations, embodying the hope that today's treatments not only extend life but also unlock access to tomorrow's breakthroughs.
- As Sotatercept does not only privide but also increases the likelihood that patients remain alive it is important to evaluate the ROV[4].
- Understanding the health economic implications of **early access** to sotatercept may inform investment **decisions** and healthcare **policies**, ultimately supporting better **long-term** outcomes for **patients** with **PAH**.

METHODS

- A comprehensive Markov **model** was constructed to simulate both survival rates and progression of **FC** in patients with **PAH** treated with sotatercept compared to those receiving background therapy (**BGT**) beginning in 2025.
- The model tracks patient cohorts over time, categorizing them by **FC** (FC I-IV) and **survival status** at each cycle, which enables the projection of the proportion of patients who remain **alive** and those who are **functionally eligible** (specifically, FC II/III) for **future** innovative therapies.
- To assess the potential **future landscape** of PAH **treatments**, a pipeline **review** was **utilized**. This review identified **ten** novel investigational therapies for PAH that were in Phase II or Phase III of development as of **April 2023**.[5]
- **Estimated** European market entry **timelines** were derived based on clinical development status and regulatory assumptions .
- The model used these timelines to **simulate** when new treatment options would likely become **available** and to estimate the **proportion** of patients who, by remaining **alive** and in the appropriate **functional class**, could benefit from these future innovations.

RESULTS

Sotatercept significantly **increases** patient survival and **eligibility** for **future** therapies compared to **BGT** in the evolving PAH treatment **landscape**.

- By **2030** with an anticipated entry of **three** new PAH therapies in Europe:
  - **89%** of **sotatercept-treated** patients projected to be **alive**, versus **53%** on **BGT**.
  - **61**% of **sotatercept** patients expected to remain **eligible** (functional class II/III) for new therapies, compared to **27%** on **BGT**.
- By 2036 with an anticipated availability of seven new PAH therapies in Europe:
  - **72%** of **sotatercept-treated** patients estimated to be **alive**, versus **17%** on **BGT**.
  - **41%** of **sotatercept** patients expected to remain **eligible** for new therapies, compared to only **7%** on **BGT**.

Conclusions

- **Sotatercept** delivers immediate clinical **benefits** by significantly **improving survival** rates and maintaining **functional class** for patients with **PAH** compared to standard of care, ensuring better health outcomes in the present.
- By **preserving** patient **eligibility** for emerging therapies, **sotatercept** substantially **increases** the number of individuals who can **access future** medical **advancements**, positioning them to **benefit** from the **next generation** of PAH treatments as the therapeutic landscape evolves.
- This **ROV highlights** the unique **long-term** investment in patient care—by providing access to **innovative** treatments today, **sotatercept** maximizes both current and future opportunities for improved **survival** and **quality of life**.

References

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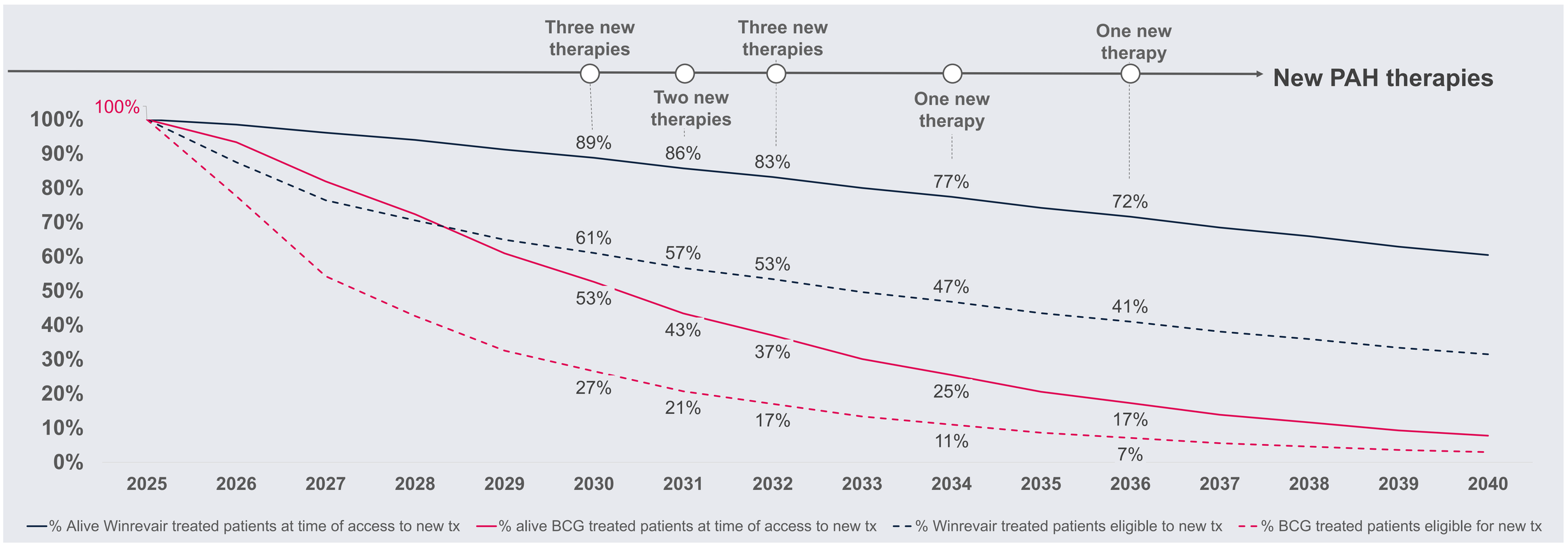
Percentage of alive and eligible for new treatments patients



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