

The benefit of introducing remimazolam for procedural sedation in Belgian clinical practice

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Background

- Remimazolam is an ultra-short acting benzodiazepine sedative, approved for procedural sedation (PS)¹.
- Two pivotal phase III randomized clinical trial (RCT) evaluating remimazolam demonstrated a rapid onset of action, a favorable safety profile, with shorter procedure time, reduced recovery time, and fewer adverse events (AEs) compared to current standard of care (SoC; midazolam)^{2,3}.

Objective

- This analysis estimates the cost implications of using remimazolam vs SoC in PS in ambulatory surgery and diagnostic procedures (for the lower and upper GI tract, rhinoscopy, laryngoscopy, sinus endoscopy, bronchoscopy, and hysteroscopy) in Belgian clinical practice.

Methods

- A dynamic simulation model assessed the impact of the use of remimazolam vs midazolam for PS in diagnostic procedures, from a government (National Institute for Health and Disability Insurance; NIHDI) and hospital perspective.
- Drug costs were excluded as remimazolam is not yet reimbursed.
- A conservative approach assumed the same staff time with both drugs despite shorter procedure and recovery duration with remimazolam, in line with current Belgian clinical practice regarding observation times.
- Clinical data, including rates of procedure failure and AEs, were derived from phase III RCTs (CNS7056-006², CNS7056-008³, CNS7056-015⁴).
- Cost data and resource use were obtained from official Belgian sources⁵⁻¹⁰ supplemented with input from Belgian clinical experts. Costs were adjusted to March 2024¹¹.

Results

Use of remimazolam results in cost savings vs midazolam of approximately up to €50 per PS, corresponding to up to 10% of total costs (excluding drug costs)

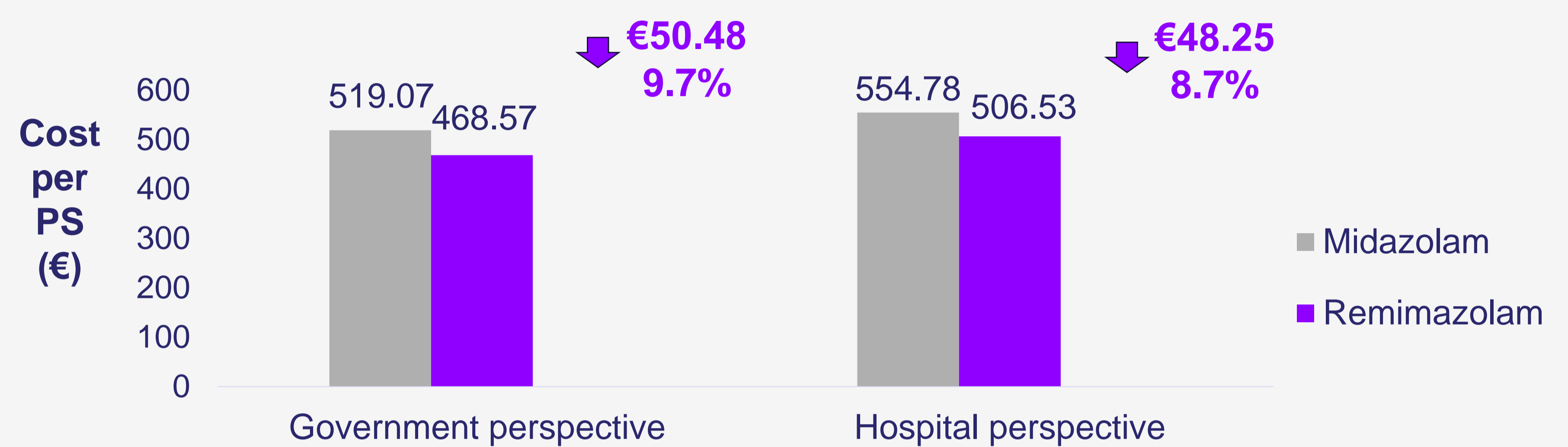


Figure 1: Overall costs per PS (excluding drug costs) with remimazolam vs SoC (midazolam)

The reduction in costs related to procedural failure with remimazolam vs midazolam is the main driver of the cost savings for PS

Table 1: Breakdown of costs (€) per PS: government perspective

Cost type	Midazolam	Remimazolam	Difference
PS reimbursement	420.20	420.20	-
AEs*	26.26	26.27	0.02#
Procedural failure**	72.60	22.10	-50.50
Total	519.05	468.57	-50.48

*Includes type of AEs and associated costs for management, as well as their rate of occurrence.

**Considers planned re-sedation, and dose adjustments, oxygen and follow-up, and their respective rate of occurrence.

#0.02 due to rounding of AE costs.

Table 2: Breakdown of costs (€) per PS: hospital perspective

Cost type	Midazolam	Remimazolam	Difference
Staff time [^]	367.78	367.78	-
Resources ^{^^}	93.69	94.80	1.11
AEs*	30.23	30.14	-0.09
Procedural failure**	63.08	13.81	-49.27
Total	554.78	506.53	-48.25

[^]Includes weighted averages across procedures of time spent by anesthetists, nurses, specialists. Conservatively assumed to be equal for remimazolam and midazolam.

^{^^}Includes costs of monitoring and supportive resources.

Conclusions

- Remimazolam is the first novel anesthetic in decades with the potential to allow shorter procedures with a lower failure rate, generating savings for both the government and hospitals.
- This analysis conservatively does not take shorter procedure and recovery times into account; including the reduction in staff time would further increase the cost savings with remimazolam.
- Remimazolam has the potential to enabling the optimization of the organization of clinical practice in sedation by reallocating scarce resource, such as availability of the operating theatres and post-sedation care units.

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