

The benefit of introducing remimazolam for general anesthesia in Belgian clinical practice

Mihalik A.¹, Gordts SC.¹, Vanlerberghe T.¹, Van de Velde M.²

1. Medical Affairs, Viatris

2. Professor of Anesthesia, UZ Leuven and KU Leuven, Belgium

EE536

Background

- Remimazolam is an ultra-short acting benzodiazepine sedative, which can be used to induce and maintain general anesthesia (GA)¹.
- Besides its rapid onset of action, remimazolam offers a favorable hemodynamic stability and safety profile versus current standard of care (SOC)^{2,3}.

Objective

- This analysis estimates the cost implications of using remimazolam vs SoC in GA in ambulatory surgery in Belgian clinical practice.
- The key comparators were propofol and sevoflurane, the most used sedatives for GA induction and maintenance, respectively, in Belgium.

Methods

- A dynamic simulation model assessed the impact of the use of remimazolam vs SoC for GA, from a hospital and a government perspective (National Institute for Health and Disability Insurance; NIHDI).
- Drug costs were excluded as remimazolam is not yet reimbursed.
- Clinical data were derived from phase III RCTs assessing remimazolam in GA (ONO-2745-05², CNS-7056-022³), supplemented with analyses of adverse event (AE) rates with remimazolam and with comparators⁴.
- 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 per GA procedure of up to 24% vs propofol (excluding drug costs)

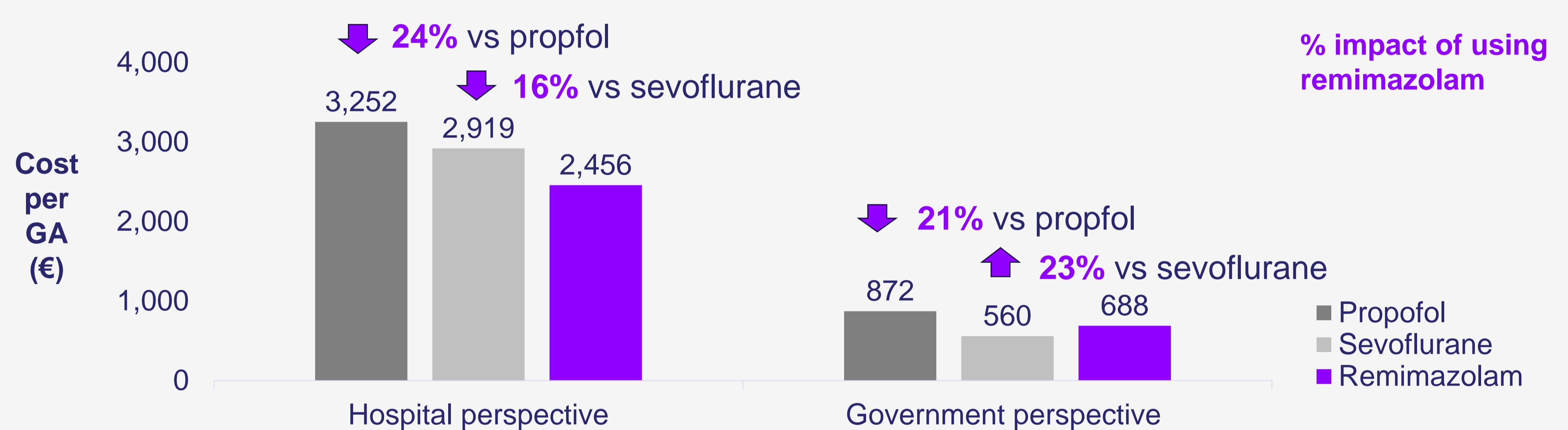


Figure 1: Overall costs per GA (excluding drug costs) with remimazolam vs SoC

The reduction in costs related to staff time and AEs with remimazolam vs SoC are the main drivers of the cost savings for GA

Table 1: Breakdown of costs (€) per GA procedure: hospital perspective

Cost type	Remimazolam	Propofol	Δ vs propofol	Sevoflurane	Δ vs sevoflurane
Staff time [^]	2,011	2,611	- 600	2,611	-600
Resources ^{^^}	78	81	- 3	78	-
AEs [*]	363	558	- 195	229	135
Procedural failure ^{**}	4	1	3	1	3
Total	2,456	3,252	-796	2,919	-463

[^]Includes weighted averages across procedures of time spent by anesthetists, nurses, specialists; ^{^^}Includes costs of monitoring and supportive resources; ^{*}Includes type of AEs and associated management costs, as well as their occurrence rates; ^{**}Includes dose adjustments, oxygen and follow-up, and the occurrence rate. Calculation inconsistencies are due to rounding.

- Due to remimazolam's safety profile, savings are realized by partially replacing anesthesiologist (the costliest staff type) in GA procedures with other staff types.
- The biggest AE cost driver is hypotension, followed by hypoxia, contributing to AE costs with propofol by up to 83% and 13%, respectively.
- From a government perspective, the driver of savings vs propofol reduced AE costs with remimazolam.

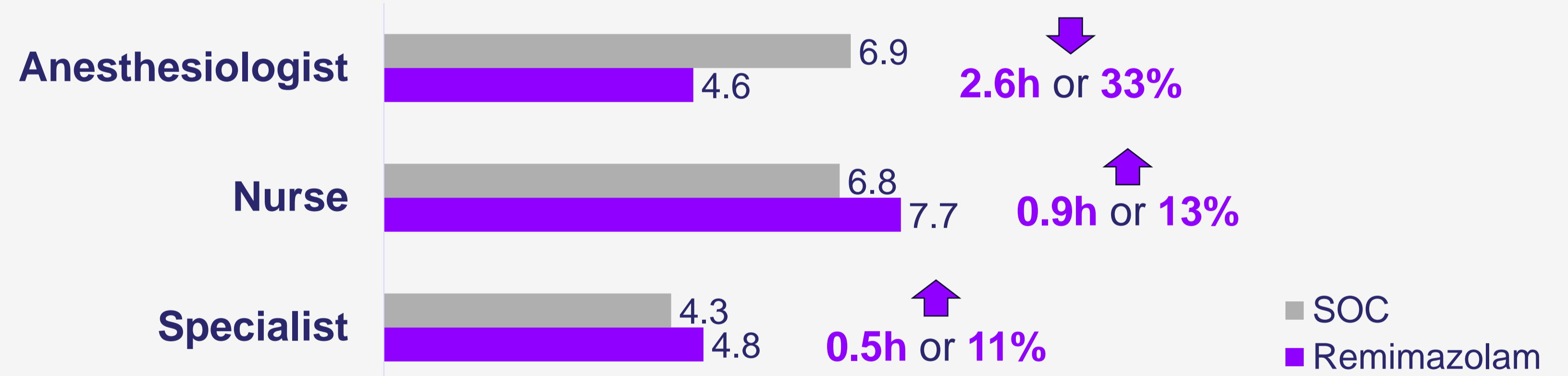


Figure 2: Staff time (h) with remimazolam vs SOC (propofol; sevoflurane) per GA

Conclusions

- Remimazolam, as an alternative to propofol in GA induction, and to sevoflurane in maintenance, can provide better outcomes for patients while also generate savings for hospitals, allowing budgets and resources to be reallocated to increase number of procedures, or to other areas of care.

References

- EMA. Product overview. <https://www.ema.europa.eu/en/medicines/human/EPAR/byfavo#product-info>. Accessed Oct 2024.
- Doi M, et al. Efficacy and safety of remimazolam versus propofol for general anesthesia: a multicenter, single-blind, randomized, parallel-group, phase IIb/III trial. *J Anesth.* 2020;34(4):543-553
- Fechner J, et al. Anaesthetic efficacy and postinduction hypotension with remimazolam compared with propofol: a multicentre randomised controlled trial. *Anaesthesia.* 2024;79:410-422
- Paion. General anaesthesia – Integrated analysis. Subgroup B. Data on file.
- NIHDI. Database of Reimbursed Drugs in Belgium. <https://webapps.riziv-inami.fgov.be/ssp/ProductSearch>. Accessed: April 2024.
- NHDI. National Database Medical Diagnosis / Care & Costs. APR-DRG. <https://tct.fgov.be>. Accessed March 2024.
- NIHDI. Hospital nursing day rates. <https://www.riziv.fgov.be/nl/themas/kost-terugbetalings/door-ziekenfonds/verzorging-ziekenhuizen/Paginas/verpleegdagprijzen-ziekenhuizen.aspx>. Accessed July 2024.
- Federation of social enterprises (SOM) Salary Scales for Healthcare Workers. [Barema330ZH-2022.03.pdf \(som.be\)](https://www.som.be/Barema330ZH-2022.03.pdf) Accessed May 2023.
- Jobat.be. Salary comparison. <https://www.jobat.be/nl/art/hoeveel-verdient-een-specialist-in-een-belgisch-ziekenhuis>. Accessed July 2023.
- NIHDI. Cost of hospitalization. <https://www.riziv.fgov.be/nl/themas/kost-terugbetalings/door-ziekenfonds/verzorging-ziekenhuizen/Paginas/default.aspx>. Accessed March 2023.
- StatBel. Consumer price index (health). <https://bestat.statbel.fgov.be/bestat/crosstable.xhtml?view=ea07572b-7fc4-40f7-af62-d20b70941e86>. Accessed March 2024.



Contact: Attila Mihalik, Attila.Mihalik@viatris.com

Presented at ISPOR Europe 2024, Barcelona, Spain, November 17–20, 2024

