

Can the German Efficiency Frontier Approach Support Decision-Making Processes for Pricing New Medicines?

An Application to Second-Line Interventions of Transplant-Ineligible Diffuse Large B-Cell Lymphoma^a

Introduction

- Unmet medical need** for treatment of patients with relapsed/refractory (r/r) diffuse large B-cell lymphoma (DLBCL), who are ineligible for standard-of-care stem cell therapy (transplant-ineligible)
- Since 2018 innovative interventions have been approved by the European Medicine Agency
- Innovative interventions** showed improved survival outcomes for affected patients
- But: Associated increasing treatment costs pose an economic burden for healthcare systems
- Challenge for decision-makers to establish a reimbursement according to the additional benefit (principle of **value-based-pricing**)
- German method: **Efficiency frontiers** to evaluate the cost-effectiveness recommended by the German health technology agency (**Institute for Quality and Efficiency in Healthcare, IQWiG**)

Objective

- To investigate whether efficiency frontiers can support **healthcare payers’ pricing decisions** for new interventions in the second-line (2L) treatment of transplant-ineligible r/r DLBCL
- Evaluation of **cost-effectiveness** ratios of 2L interventions

Methods

Following methods of Germany’s IQWiG^b:

1) Definition of study population:

- Transplant-ineligible r/r DLBCL patients in 2L setting
- Interventions: i) **R-GemOx** (rituximab-gemcitabine-oxaliplatin), ii) **BR** (bendamustin-rituximab), iii) **Tafa-L** (tafasitamab-lenalidomide), iv) **pola-BR** (polatuzumab-bendamustine-rituximab), v) **axi-cel** (axicabtagene ciloleucel), vi) **liso-cel** (lisocabtagen maraleucel) based on **EMA approval**

2) Clinical benefit assessment:

- Parameter: median overall survival (mOS) (y-axis)
- Systematic Review in PubMed on November 04, 2022, updated on September 18, 2023
- Pooling of varying mOS values and calculation of standard deviation (SD) via bootstrapping

3) Calculation of treatment costs:

- Parameter: first-year treatment costs (x-axis)
- Assessment of drug costs and medical services costs
- Based on publicly available databases (InEK Databrowser, Lauer-Taxe, Uniform Value Scale) and German guideline recommendations

Discussion

- The efficiency frontier builds the **cost-effectiveness threshold** for new interventions
- BR, R-GemOx, and Tafa-L** form the efficiency frontier in 2L r/r transplant-ineligible DLBCL and are evaluated as **cost-effective interventions**
- Pola-BR is extendedly-dominated by the cost-effectiveness ratio of R-GemOx and Tafa-L, but is not clearly inefficient due to increasing clinical values
- ➡ **Limitation: Study results for axi-cel and liso-cel** (CAR-T cell therapies) as well as **5-year results** of the pivotal study of **Tafa-L** **could not be included as mOS was not reached**. Thus, with longer follow-up and new results from clinical studies the **efficiency frontier may change**.

Conclusion

- Efficiency frontiers** offer the advantage of comparing all interventions in an indication area, according to the principle of **value-based pricing**.
- The most cost-effective intervention – Tafa-L in this case – can be identified, allowing the approach to serve as the **basis for pricing decisions**.

Results

Intervention	Clinical benefit [OS (SD) in months]	Total treatment costs [€]	Drug costs*** (medication and preparation) [€]	Costs of medical services [€]
Tafa-L	45.7*	104,592	100,675	3,918
pola-BR	18.4*	85,909	83,417	2,491
R-GemOx	13.27 (2.76)	26,868	24,259	2,610
BR	11.49 (0.5)	23,615	21,461	2,154
axi-cel	n/a**	297,877	272,000	25,877
liso-cel	n/a**	370,877	345,000	25,877

Table 1: Clinical values and treatment costs of 2L transplant-ineligible r/r DLBCL

* mOS; no bootstrapping possible, as only one outcome value was included.
** mOS not reached; no further analysis possible (see limitation).
*** Drug costs according to Lauer-Taxe, date Oktober 15, 2023.

By comparing the incremental cost-benefit ratio of all interventions in 2L transplant-ineligible r/r DLBCL treatment, the efficiency frontier allows decision-makers to (graphically) deduce which interventions are dominant to others in benefits and costs.

Limitation: Interventions lacking numeric benefit values could not be plotted.

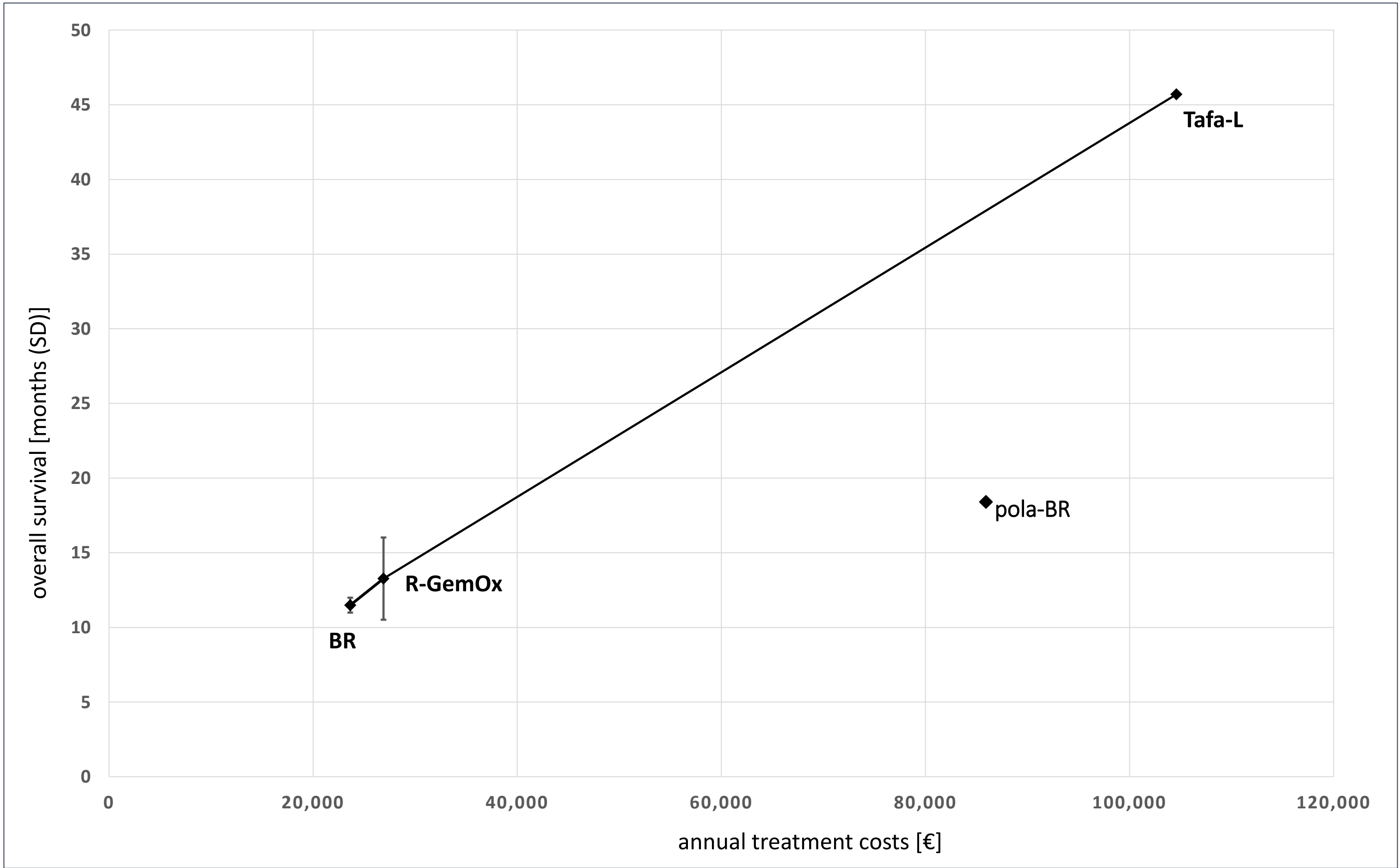


Figure 1: Efficiency frontier of 2L interventions for transplant ineligible r/r DLBCL

^a Kurte, M. S., Siefen, A. C., Jakobs, F., von Tresckow, B., Reinhardt, H. C., & Kron, F. (2023). Cost-effectiveness analysis of transplant-ineligible relapsed or refractory diffuse large B-cell lymphoma treatment options-Experience of the efficiency frontier approach. *European journal of haematology*, 10.1111/ejh.14095. Epub ahead of print. <https://doi.org/10.1111/ejh.14095>
^b Institute for Quality and Efficiency in Health Care (IQWiG). General Methods. Version 7.0 of September 19, 2023. 2023. https://www.iqwig.de/methoden/allgemeine-methoden_version-7-0.pdf Accessed Oktober 10, 2023.