Estimating the Economic Burden of DLBCL: Developing and Testing a Cost-of-Disease Model

6655

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INTRODUCTION

- Approximately 35% of diffuse large B-cell lymphoma (DLBCL) patients relapse or develop refractory (r/r) disease after first-line R-CHOP.
- These patients often receive intensive treatments such as stem cell transplantation or CAR-T therapy, driving overall costs of DLBCL.
- Quantifying total and relapsed/refractory (r/r) costs helps identify major cost drivers and informs value-based resource allocation.

STUDY AIM

To develop and validate a population-based cost-of-disease model to:

1. Estimate the total annual economic burden of DLBCL in the Netherlands
2. Quantify the costs associated with r/r DLBCL
3. Identify where costs concentrate across treatment lines to support value-based decision-making

METHODS

Model	Cross-sectional, transition-based cost-of-disease model. Patients could progress through up to four treatment lines (1L–4L) via transitions between remission, relapse, refractory disease, and death.
Population	Simulated Dutch adult DLBCL population (n=1.563)
Input data	Dutch Cancer Registry (NKR) and literature (Pennings et al., Blood Cancer J 2023), clinical guidelines and clinical expert input.
Costs included	Drug acquisition (list prices) and hospital care based on Dutch activity-based reimbursement (Diagnosis Treatment Combination)
Model Validation	External technical validation performed following AdVISHE checklist. Clinical assumptions validated by clinical experts.

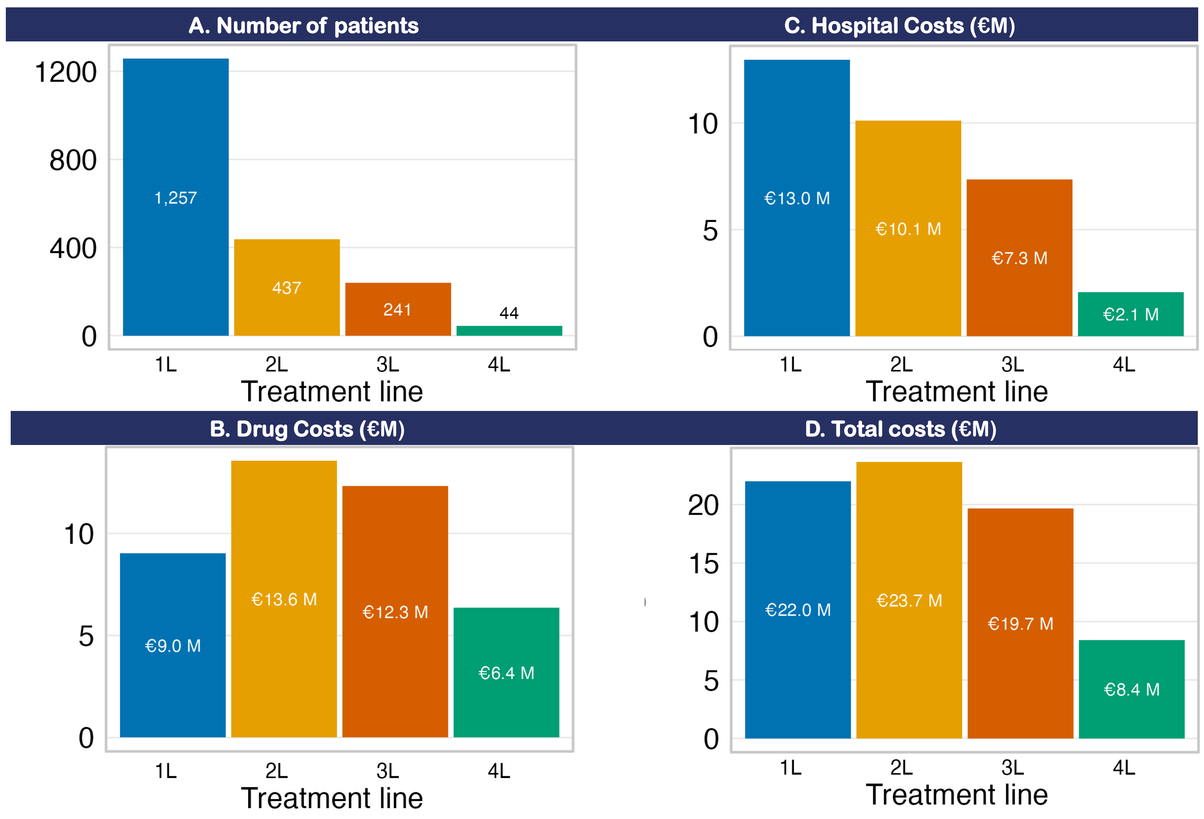

Figure 1. Distribution of patients and associated costs across treatment lines.

RESULTS

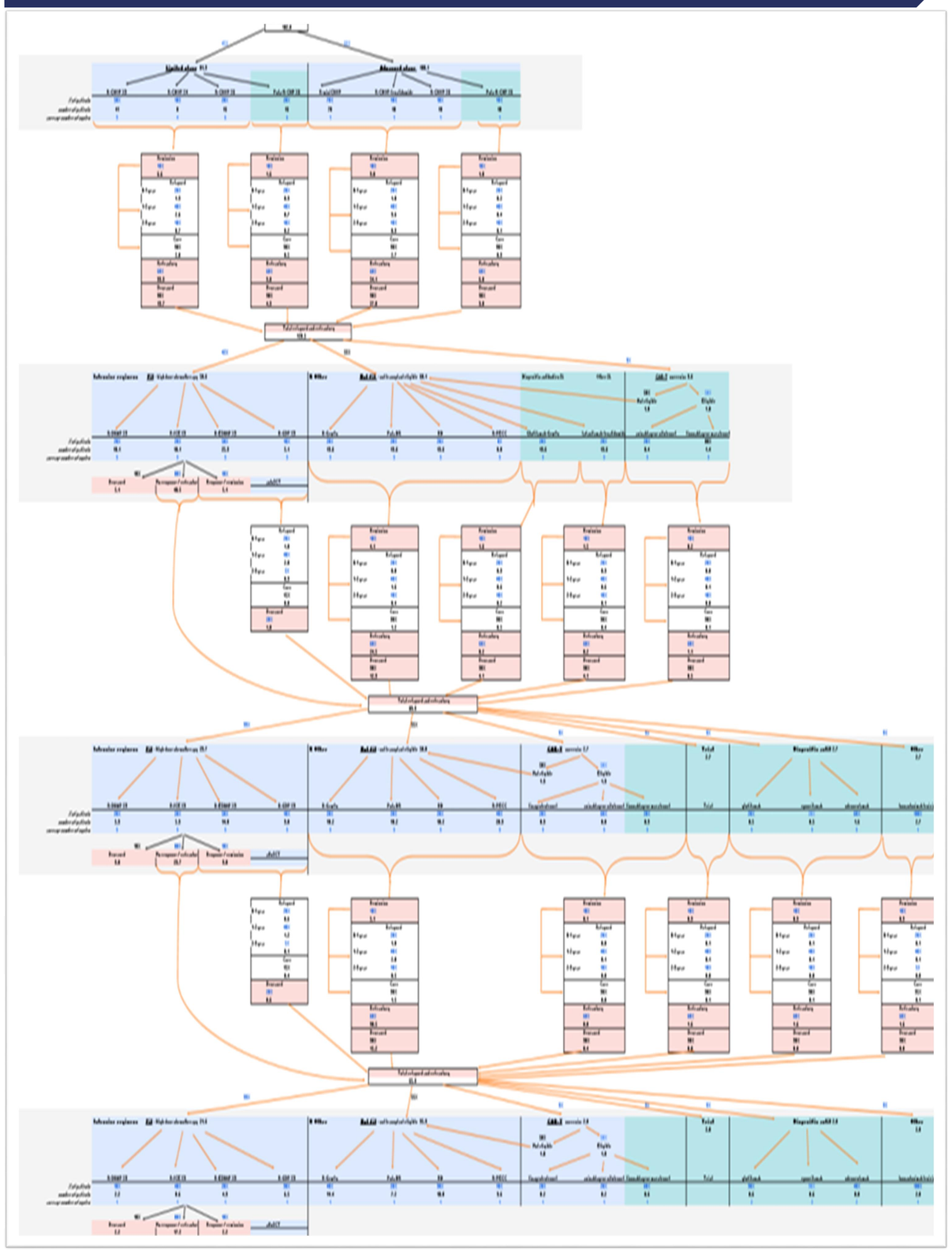

Figure 2. Schematic Representation of Model Structure

Table 1. Summary of key metrics for DLBCL Care in the Netherlands

Metric	Value
Total annual costs of DLBCL care in the Netherlands	€73.7 million
Average cost per treated patient	€58.670
Patients receiving ≥ second-line therapy	~350 patients (22%)
Mean cost per r/r patient	€147.936
Largest cost driver	CAR-T cell therapy (2L)

KEY FINDINGS

- An adaptive, externally validated model was developed to estimate the economic burden of DLBCL.
- The model highlights where costs concentrate across treatment lines.
- It supports evaluation of novel treatments and integration of real-world data (RWD).

FUTURE PERSPECTIVES

- The model is adaptive, allowing updates with new therapies, treatment guidelines, or cost data.
- Real-world data could be integrated to enhance accuracy and external validation.
- Model iterations will include environmental, and capacity metrics align with sustainable care goals.

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