EE115

Bellone M[1], Pradelli L[1], Ghislieri D[2]

COST-EFFECTIVENESS AND COST-UTILITY ANALYSES OF POLATUZUMAB VEDOTIN WITH RITUXIMAB AND CHEMOTHERAPY VS. RITUXIMAB AND CHEMOTHERAPY IN TREATING NAÏVE DIFFUSE LARGE B-CELL LYMPHOMA IN ITALY

[1] AdRes HE&OR, Turin, Italy, [2] Roche S.p.A., Monza, Italy

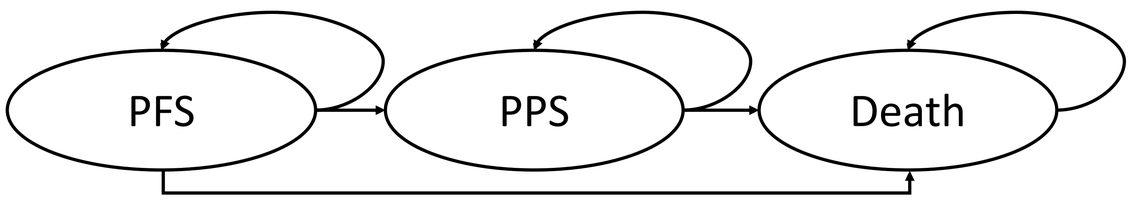
Objective

- Diffuse large B-cell lymphoma (DLBCL) is the most common kind of non-Hodgkin lymphoma (NHL) representing about 30% of all NHL and 80% of aggressive NHL [1]. Usually, DLBCL occurs in people older than 60 years with a growing incidence as age increases and a median age at diagnosis from 65 to 74 years [1-2].
- This analysis assessed the incremental cost-effectiveness (ICER) and cost-utility (ICUR) ratio of polatuzumab vedotin with rituximab and chemotherapy (Pola-R-CHP) versus rituximab and chemotherapy (R-CHOP) for treatment-naïve adult patients with DLBCL, from the Italian Health Service perspective.

Methods

- A partitioned survival model of three mutually exclusive health-states – progression-free survival (PFS), progressed disease (PD) and death – was developed to estimate lifetime clinical outcomes and costs of Italian patients treated with Pola-R-CHP or R-CHOP (Figure 1).

Figure 1. Model structure



- Clinical inputs and patients' characteristics were derived from POLARIX trial (NCT03274492), a phase III study comparing the effects of Pola-R-CHP vs R-CHOP in 879 randomized patients.
- Disease evolution was simulated through a mixture cure rate model (MCM), a statistical method able to support the evidence that a proportion of treated patients – 75% for Pola-R-CHP and 64% for R-CHOP, both estimated assuming that the PFS data of the POLARIX trial follows a mixture distribution of generalized gamma and age adjusted background mortality– enters long-term remission. PFS R-CHOP curve extrapolated with MCM generalized gamma distribution was validated using the PFS data of the POLARIX matched population of GOYA trial. Overall survival (OS) was then obtained by weighting the proportion of patients with long-term remission and those with premature progression. Time to off treatment (TTOT) curves were directly retrieved from the POLARIX trial and used to define drug consumption.
- Health utilities were taken from the GOYA trial (NCT01287741) and were adapted using specific weights for the Italian population [3].
- Direct healthcare costs, including drugs, administration, disease monitoring, adverse event management and post-progression therapy were collected from official and published Italian sources [4]. Net prices for drugs with confidential rebates were used and further reductions agreed with AIFA (confidential discounts) were considered [5] (Table 1).
- Costs, reported in Euro-2022, and health gains were discounted at an annual 3% rate according to Italian guidelines on health economic evaluation [6]. A half cycle correction was applied in the model.
- A probabilistic sensitivity analysis (PSA) was carried out to explore parameter uncertainty.

Table 1. Costs

Cost item	Value
Polatuzumab 30mg*	€ 2,378.64
Polatuzumab 140mg*	€ 11,100.30
Rituximab 100mg*	€ 200.42
Rituximab 500mg*	€ 1,001.93
IV administration	€ 37.10
AE management (una tantum)	€ 1,502 (Pola-R-CHP); € 1,155 (R-CHOP)
Supportive care	Pola-R-CHP: 2,098; R-CHOP: 1,821
Post-progression (una tantum)	From Pola-R-CHP: € 49,047.74 From R-CHOP: € 76,813.85
Terminal care (una tantum)	€ 4,691.73

* Ex-factory price net of mandatory discounts is shown [11]. For drug cost, confidential discounts were applied [5].

CHP and CHOP therapies' costs were not shown in the table due to their negligibility with respect to total treatment cost.

Adverse event management costs: only adverse events deemed treatment related and serious were considered. All included events lead to a hospitalization or prolonged an ongoing hospitalization. Costs per event were taken from national DRG tariff [4].

Supportive care: annual frequency of health resources consumption was derived from national guidelines [7] and unit costs were taken from national tariffs [4].

Post-progression therapy: POLARIX trial data and national tariffs were used to inform the frequency and costs of post-progression therapies [8].

Terminal care: estimated from literature data [9].

Results

- Pola-R-CHP generated **0.52 additional LYs** and **0.54 additional QALYs** at an additional cost of **€18,300** relative to R-CHOP (Table 2)

Table 2. Summary results – discounted values

	Pola-R-CHP	R-CHOP
Total LYs	**13.05**	**12.53**
PFS	11.23	9.88
PPS	1.83	2.65
Total QALYs	**10.96**	**10.42**
PFS	9.60	8.45
PPS	1.36	1.98
Overall costs (€)	**49,597**	**31,281**
Treatment	33,483	3,258
Administration cost	281	274
Supportive care PFS	1,161	1,125
AE management	1,502	1,155
Subsequent therapy & PPS	10,229	22,453
Terminal care	2,941	3,015

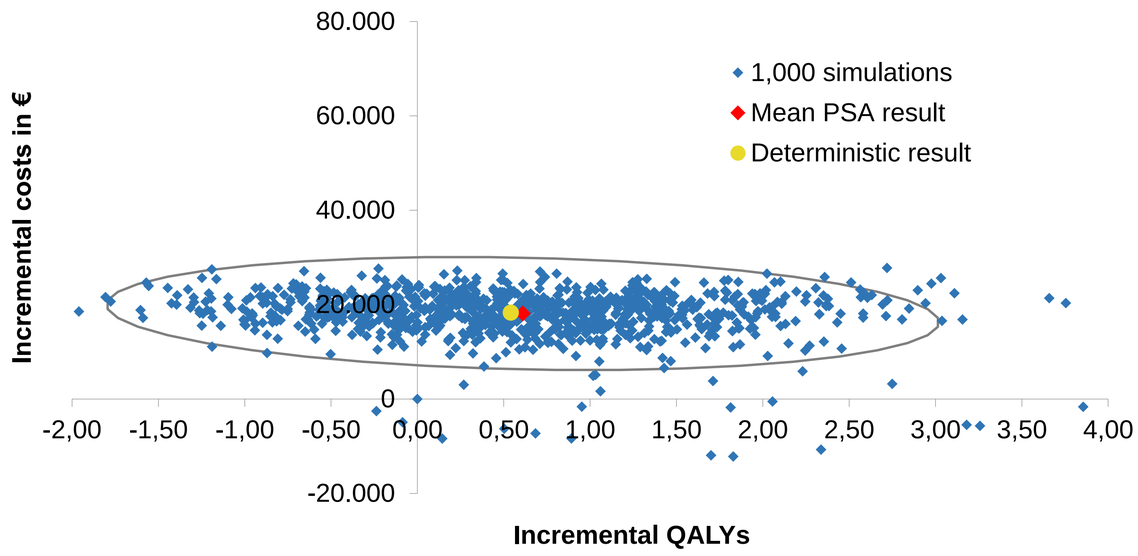
- **ICER** for the comparison of Pola-R-CHP versus R-CHOP is around **€35,000 per LY** gained and **ICUR** is about **€34,000 per QALY** gained (Table 3) within the Italian willingness to pay threshold, conventionally set at around 60,000 € per LY gained [10].

Table 3. ICER and ICUR

	Δ Pola-R-CHP vs R-CHOP	ICER/ICUR
Total LYs	0.52	34,998 € / LY gained
Total QALYs	0.54	33,830 € / QALY gained
Overall costs (€)	18,316	

- PSA confirms the robustness of the model, with a high probability of dropping on the cost-effectiveness region (Figure 2).

Figure 2. Incremental cost-effectiveness plane



Conclusions

- **Pola-R-CHP showed superior clinical efficacy** compared to R-CHOP.
- In light of the unmet medical need, **Pola-R-CHP should be considered a cost-effective option** for treatment-naïve patients with DLBCL, since the deterministic incremental ratios are both **below** the threshold of €60,000.

References

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