EE214

The cost-effectiveness of abemaciclib combined with endocrine therapy for the treatment of persons with HR+, HER2- node positive, early breast cancer at high risk of recurrence: A Spanish perspective

Davie A[1], Molero A[1], Goel B[1]

[1]Eli Lilly and Company, Indianapolis, USA

Background

- Approximately 40% of people with hormone receptor positive (HR+), human epidermal growth factor receptor 2-negative (HER2-) early breast cancer (EBC) are at high risk of disease recurrence.[1]
- Abemaciclib (ABE) in combination with adjuvant endocrine therapy (ET) is the first and only approved cyclin dependent kinase (CDK) 4&6 inhibitor approved for the treatment of high-risk EBC.[2]
- The addition of up to two years of abemaciclib to a minimum of five years adjuvant ET backbone, in the monarchE trial (NCT03155997), reduced the risk of disease recurrence (hazard ratio: 0.68; 95% CI: 0.57-0.80; nominal *P*-value < 0.0001), and, specifically, distant disease recurrence (hazard ratio: 0.67; 95% CI: 0.55-0.80; nominal *P*-value < 0.0001).[3]

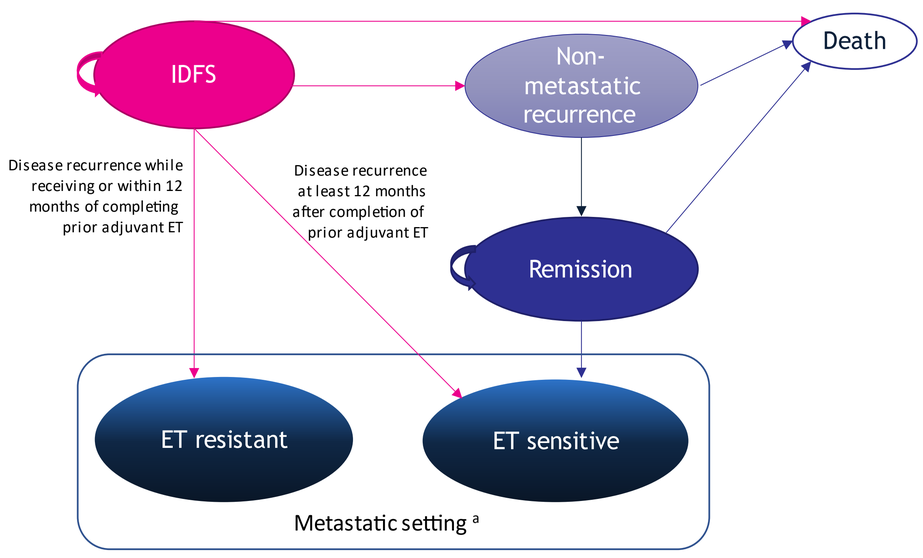
Objective

- To evaluate the cost-effectiveness of abemaciclib plus adjuvant ET versus ET alone from a Spanish healthcare system perspective.

Study Design/Methods

- Comprehensive details on the model development, including methodology, data sources, assumptions and limitations have been previously published.[4]
- A cohort state-transition model was developed with five health states: invasive disease-free survival (IDFS); non-metastatic recurrence; remission; metastatic recurrence; and death (Figure 1).

Figure 1. Model overview



[a] In the metastatic setting, a fixed payoff approach was used for life years, costs and QALYs.
Abbreviations: ET, endocrine therapy; IDFS, invasive disease–free survival.

- Individual patient-level data (IPD; data cut-off date 01 April 2021) from the monarchE trial (NCT03155997), were used to parametrize IDFS, time to treatment discontinuation (TTD), and overall survival (OS; without distant recurrence).
- In the absence of sufficient longer-term follow-up from monarchE, the follow-up period was 27 months, the non-metastatic and metastatic recurrence health states were informed by data from a broader advanced breast cancer population, inclusive of those at high risk of disease recurrence, published sources, and clinical expert opinion.
- Resource use and costs were obtained from published sources: Botplus[5], eSalud database[6]. Cost year was 2021 or latest available data, public prices for all treatment regimens were used.
- Health state utilities were derived from EuroQoL 5-dimension 5-level monarchE IPD and other sources.
- Costs, life years (LY) and QALYs for both abemaciclib plus ET and ET alone were calculated over a lifetime horizon and discounted at an annual rate of 3.0%. The cycle length was 28 days to reflect treatment practice, half cycle adjustment was used. The perspective was that of the Spanish healthcare system.
- To test the robustness of the model, inputs and assumptions were varied and tested through deterministic, scenario, and probabilistic analyses.
- Due to lack of evidence, the model does not allow for re-challenge with a CDK 4&6 inhibitor following disease recurrence of abemaciclib plus ET, which is anticipated to occur in clinical practice for an unknown proportion of people.

Results

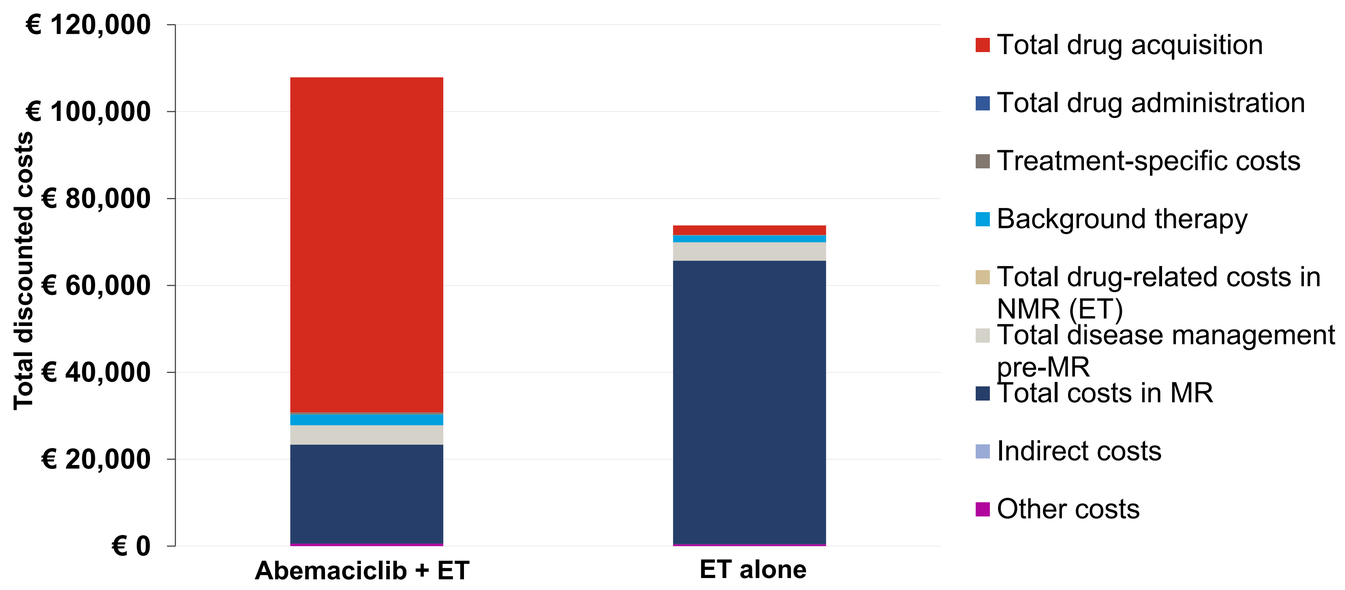
- The estimated total discounted costs (€107,886 vs. €73,818; difference: €34,068) and quality-adjusted life-years (QALYs; 12.45 vs. 11.30; difference: 1.15) were higher for abemaciclib plus ET compared with ET alone (Table 1). The incremental cost-utility ratio was €29,697 per QALY gained.
  - The key cost driver was drug acquisition cost, specifically the CDK4&6 inhibitors considered at list price in this analysis (Figure 2).

Table 1. Total and incremental outcomes of abemacilib plus ET vs ET alone

Treatment arm	Costs	LY*	QALY	ICUR (Cost/QALY)
ET alone	€73,818	22.73	11.30	-
Abemaciclib plus ET	€107,886	25.33	12.45	-
Incremental	**€34,068**	**2.60**	**1.15**	**€29,697**

Abbreviations: ET: endocrine therapy, ICER: incremental cost-utility ratio, LY: life years, QALY: quality-adjusted life years
*undiscounted

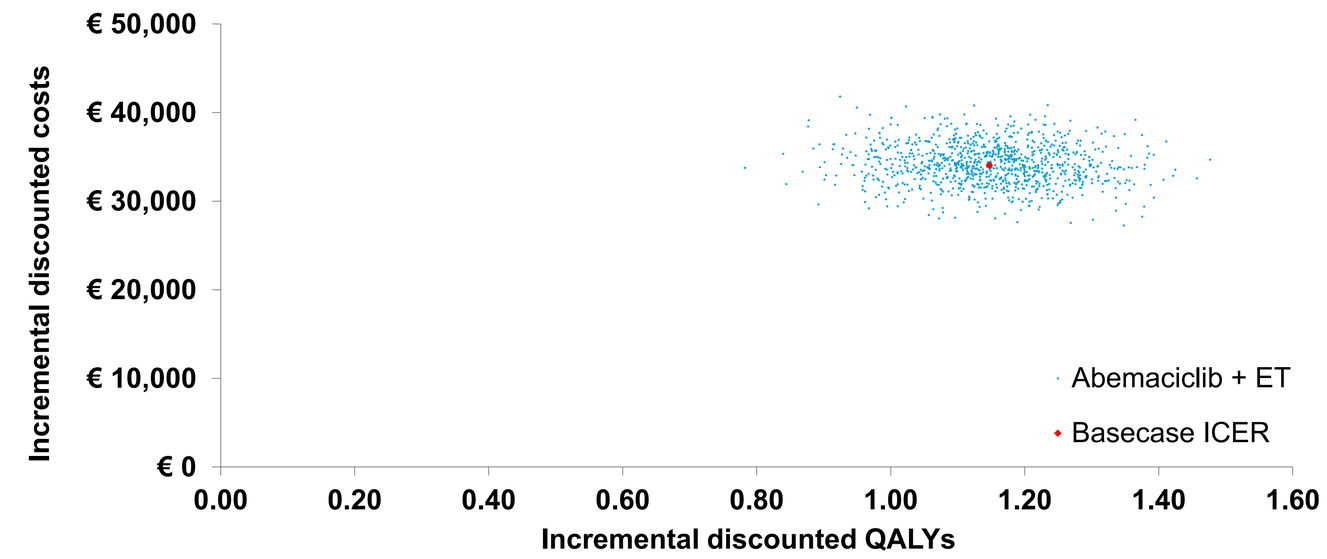
Figure 2. Estimated total discounted costs by category



Abbreviations: ET: endocrine therapy, MR: metastatic recurrence, NMR: non-metastatic recurrence

- The results of the PSA show uncertainty in both the estimated incremental discounted costs and QALYs associated with abemaciclib plus ET compared to ET alone (Figure 3).

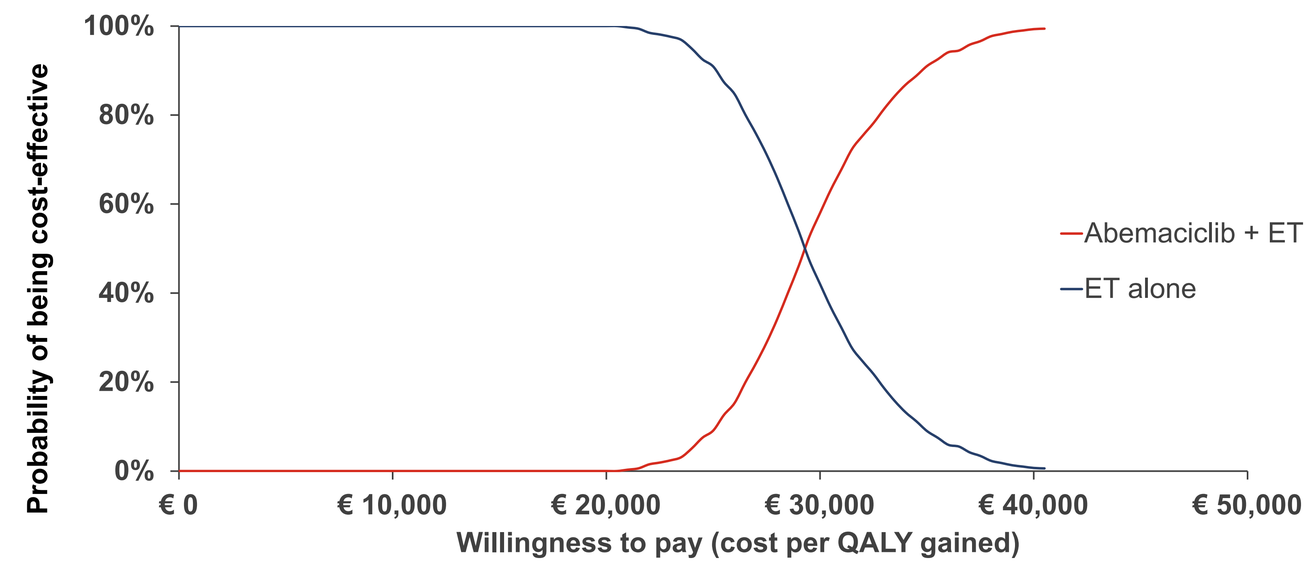
Figure 3. Incremental costs and QALYs of Abemaciclib + ET vs. ET alone



Abbreviations: ET: endocrine therapy, QALY: quality-adjusted life years

- The estimated likelihood of abemaciclib plus ET being cost-effective relative to ET alone was 90% under an assumed willingness-to-pay threshold of €35,000 per QALY gained (Figure 4).

Figure 4. Multiway cost-effectiveness acceptability curve



Abbreviations: ET: endocrine therapy, QALY: quality-adjusted life years

Conclusions

- Despite the limited longer-term follow-up, the addition of abemaciclib results in greater QALY gains over lifetime due to the delay or avoidance of disease recurrence.
- The cost of abemaciclib is offset by the cost associated with metastatic disease in the ET alone arm. There is a need for further research to understand the additional costs and outcomes associated with rechallenge with a CDK 4&6 inhibitor
- Abemaciclib plus ET is a cost-effective treatment option versus ET alone for persons with HR+, HER2- node-positive EBC at high risk of disease recurrence in Spain.

References

1. Martin et al. Breast Cancer Res Treat. 2023 Sep;201(2):151-159
2. European Medicines Agency. Available at: Verzenios - EPAR - Product Information. Last accessed 21 September 2023
3. Toi M, et al. The Oncologist. 2023;28,e77-e81
4. Davie A, et al. Glob Reg Health Technol Assess 2023; 10: 1-8
5. Base de Datos de medicamentos del Consejo General de Farmacéuticos (Bot PLUS). Available at https://botplusweb.portalfarma.com. Last accessed 17 May 2022.
6. Gisbert R BM. Base de Datos de Costes Sanitarios eSalud. Barcelona: Oblikue Consulting, S.L.. Available at: http://www.oblikue.com. Last accessed 17 May 2022.

Acknowledgements
We would like to thank Sory Traoré (Eli Lilly and Company) and OPEN Health Evidence & Access for the global model development.

Scan or click the QR code or use this URL (https://lillyscience.lilly.com/congress/isporeu2023) for a list of all Lilly content presented at the congress.

Other company and product names are trademarks of their respective owners.