



COST-EFFECTIVENESS ANALYSIS OF TRASTUZUMAB DERUXTECAN VERSUS TRASTUZUMAB EMTAMSINE IN PATIENTS WITH HER2-POSITIVE BREAST CANCER

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Background and importance

Incidence of breast cancer, associated with the challenge of identifying effective therapeutic treatments and the increase in healthcare costs, highlights the need for the development of optimal treatment strategies. These strategies are pivotal in enhancing access to treatment and guaranteeing comprehensive care for an expanding patient population.

Aim and objectives

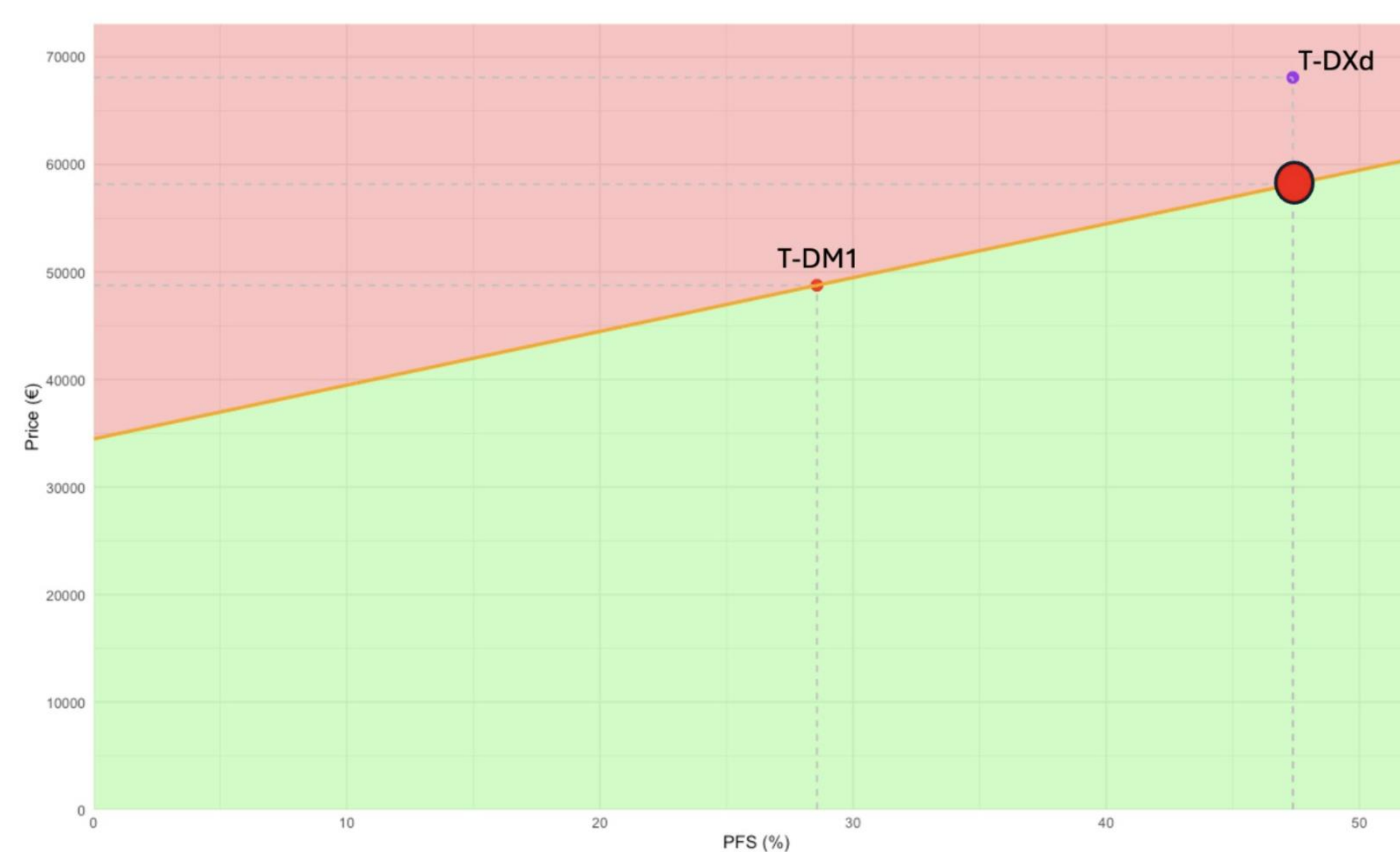
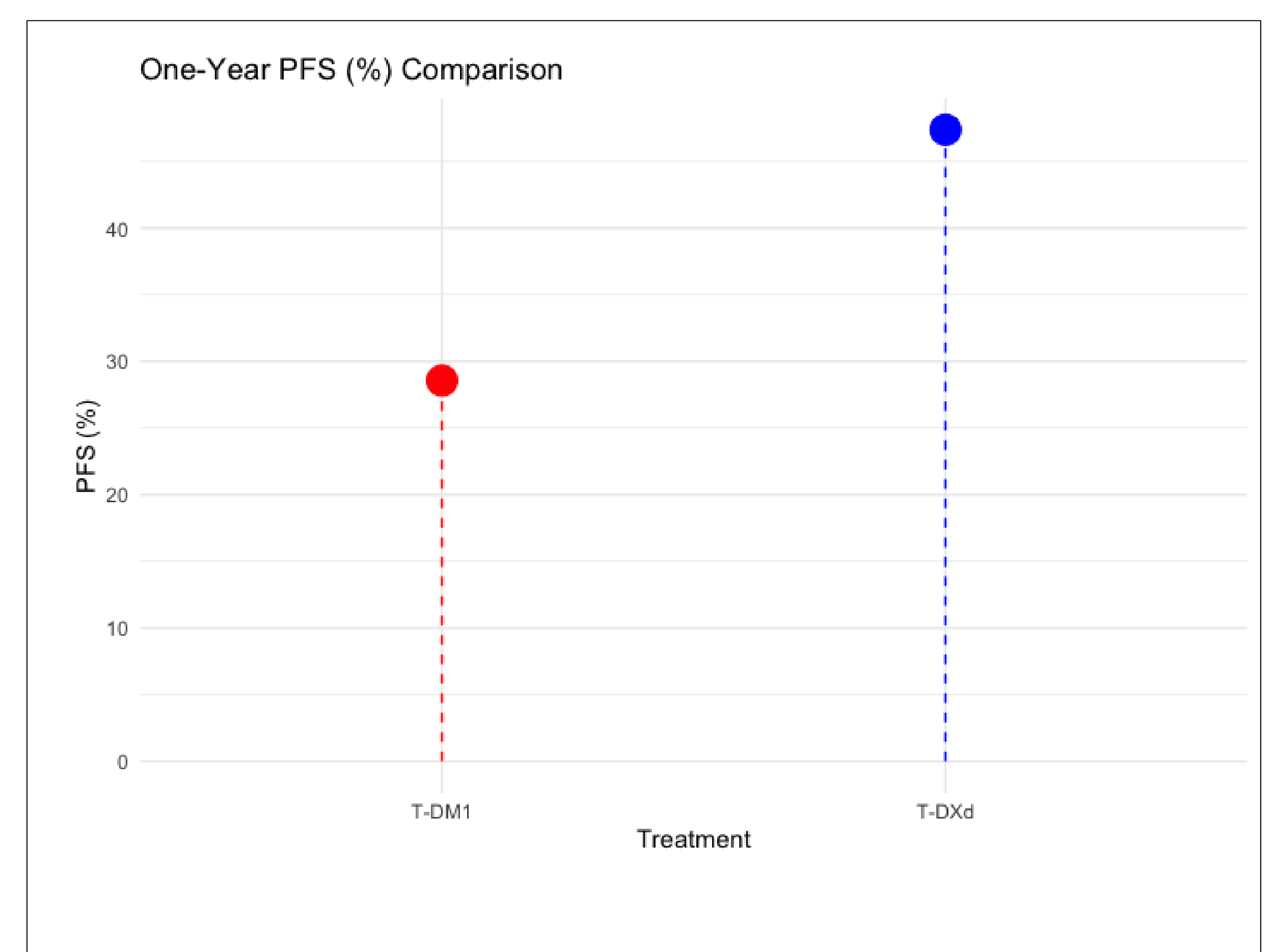
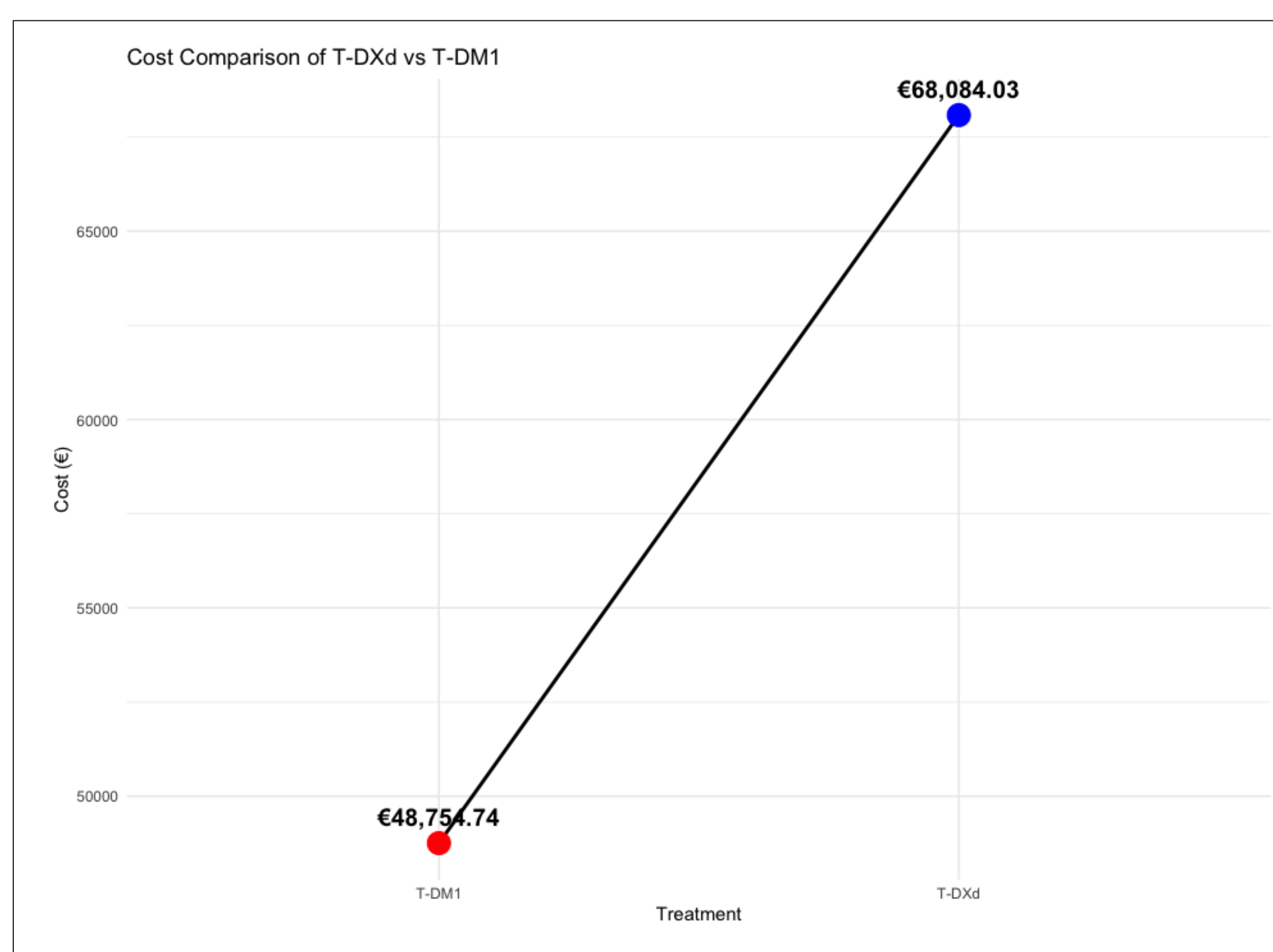
The aim of study was compared to treatment with trastuzumab-deruxtecan(T-DXd) and trastuzumab-emtansine(T-DM1) as second-line therapy for patients with HER2-positive unresectable or metastatic(Mbc) breast cancer.

Material and methods

This single-centre observational study has retrospectively analysed data from medical records of 40 adult patients with unresectable or Mbc HER2-positive breast cancer. The study included 21 patients who had received the treatment with T-DM1 previously treated with trastuzumab and taxane, and 19 patients who had already undergone two or more anti-HER2 treatments and they were treated with T-DXd. The analysis was conducted from the perspective of the National Health System(NHS) over a one-year time horizon. The recorded data included the costs, incremental cost-effectiveness ratio(ICER) and number needed to treat(NNT).The willingness to pay(WTP) for progression-free survival(PFS) was set at €50,000.00. Price of T-DXd and T-DM1 were € 1,077.62 and € 1,157.52 respectively.

Results

The recommended dose of T-DXd was 5.4 mg/kg by infusion every 3 weeks(21-day cycle) until disease progression or toxicity. A one-year treatment at average weight of 65 kg required 63 packs at €68,084.032 total cost. The recommended dose of T-DM1 was 3.6 mg/kg, given every three weeks(21-day cycle). For a one-year treatment at 65 kg, 42 packs were needed at €48,754.74 cost. The overall cost of treatment with T-DXd was estimated to be €68,084.03 with a one-year PFS of 47.37%, while the cost of treatment with T-DM1 was assessed to be €48,754.74 with a one-year PFS of 28.57%. The incremental cost-effectiveness ratio(ICER) was €102,815.37. NNT was 5.32.



● The maximum cost that we are willing to pay for T-DXd therapy to be cost-effective is considered to be \$50,000, based on a Willingness-To-Pay (WTP) threshold.

Conclusion and relevance

Despite the higher efficacy of trastuzumab deruxtecan in patients with human epidermal growth factor receptor 2 positive metastatic breast cancer, the results demonstrate the therapy wasn't cost-effective, in agreement with the findings of previous scientific studies(1).

Acknowledgements

(1)Wang J.et al.Cost-Effectiveness Analysis of Trastuzumab Deruxtecan versus Trastuzumab Emtansine in Human Epidermal Growth Factor Receptor 2-Positive Metastatic Breast Cancer in the USA. Adv Ther.2022 Oct;39(10):4583-4593.

