

Cost-Effectiveness of Ribociclib plus a Non-Steroidal Aromatase Inhibitor for the Treatment of Pre- and Peri-Menopausal Women with HR+/HER2 Advanced Breast Cancer in Türkiye

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INTRODUCTION

Breast cancer (BC) is a prominent cause of death among women. The majority of breast cancer cases (approximately 68%) are positive for the estrogen and progesterone (HR+) hormones and negative for human epidermal growth factor-2 (HER2-) (American Cancer Society, 2022).

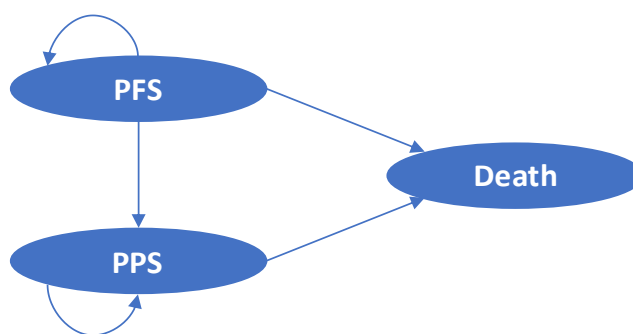
OBJECTIVES

The objective of the study is to evaluate the cost effectiveness (CE) of ribociclib plus a non-steroidal aromatase inhibitor (NSAI) and goserelin (ribociclib treatment hereafter) for pre- and peri-menopausal women with HR+/HER2- ABC who have not received prior hormonal therapy.

METHODS

A Markov model (Figure 1) with a 15-year time horizon and a 28-day cycle length was designed to evaluate the CE of ribociclib treatment in comparison to an NSAI, exemestane, paclitaxel and docetaxel treatments. The model was comprised of three stages as progression free survival, post-progression survival and death. The results of MONALEESA-7 trial that used an NSAI as a comparator were used for effectiveness data. An indirect comparison was made to compare the effectiveness of ribociclib treatment with exemestane, paclitaxel and docetaxel. Only direct costs were included in the model as per the requirements of the Social Security Institution (SSI). Costs were estimated based on expert views of resource use for treatment of adverse events, monitoring, disease progression, terminal care and pre- and post- progression. Both costs and outcomes were discounted by 3%. ICER was calculated as the incremental cost per incremental life years (LY) as required by the SSI. The endpoints for the analysis were life years and QALYs.

Figure 1: Model Structure



RESULTS

Results of the CE analyses are presented in Table 1

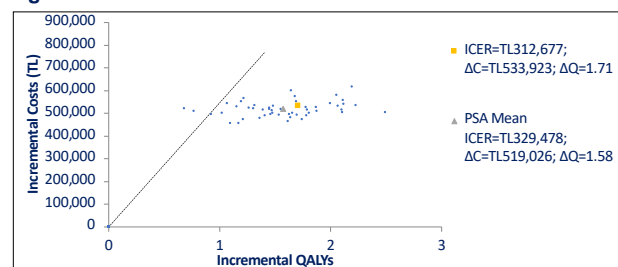
Table 1: Cost-Effectiveness Analysis Results

	Ribociclib + NSAI	NSAI	Exemestane	Paclitaxel	Docetaxel
Costs (TRY)	611,507	77,585	88,933	64,057	173,566
Life Years	8.29	6.13	5.97	4.61	6.12
QALYs	6.35	4.64	4.54	3.36	4.42
Incremental (ribociclib+ NSAI vs comparator)					
Costs (TRY)		533,923	522,575	547,450	437,942
Life Years		2.17	2.33	3.68	2.18
QALYs		1.71	1.81	2.99	1.93
ICER					
Per Life Years		246,572	224,669	148,733	201,210
Per QALYs		312,677	287,951	182,862	227,289

*Ribociclib is reimbursed in the scope of a MEA with confidential discount. Therefore regular/standard public discount (41 %) is used to calculate ribociclib's cost in this CE analysis.
 ICER: Incremental Cost Effectiveness Ratio, QALY: Quality Adjusted Life Years, TRY: Turkish Lira

The ribociclib treatment estimated to yield 8.29 LYs. The incremental LYs for comparators were 2.17, 2.33, 3.68 and 2.18 for an NSAI, exemestane, paclitaxel and docetaxel respectively. The incremental cost per incremental LY was 246,572 TRY for an NSAI treatment, 224,669 TRY for exemestane, 148,733 TRY for paclitaxel and 201,210 TRY for docetaxel. Türkiye does not have a published threshold value to be used in these decisions. The GDP per capita was stated as 9,485\$ (182,301 TRY, Central Bank exchange rate of 31.03.2023 1\$=19.22 TRY) in 2022 by the government's Medium Term Plan. When the GDP per capita values are used (three times GDP is 546,945TRY), the incremental cost is lower than the GDP values. The sensitivity analyses indicated that the CE results were robust (Figure 2).

Figure 2: Cost Effectiveness Plane for Ribociclib + NSAI vs NSAI



CONCLUSION

Ribociclib treatment for pre- and peri-menopausal women with HR+/HER2- ABC in comparison to an NSAI, exemestane, paclitaxel and docetaxel can be considered as a cost-effective option in Türkiye as the ICERs per LYs fall below the three times GDP per capita.

References

American Cancer Society. Breast Cancer Facts & Figures 2022-2024. Atlanta: American Cancer Society, Inc. 2022.

This study is based on the clinical trial results before 2014. The results of more recent studies are not included.

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