ECONOMICAL IMPACT OF DOSE REDUCTION TREATMENT FOR RIBOCICLIB, PALBOCICLIB AND ABEMACICLIB IN COLOMBIA

Poster
EE515

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Introduction

- Patients diagnosed with hormone receptor positive (HR+) human epidermal growth factor receptor 2 negative (HER2-) advanced breast cancer (aBC) receiving CDK4/6i therapy (ribociclib, palbociclib or abemaciclib), have a probability of having dose reductions for the management of treatment-related serious adverse events (SAEs) [1].
- Clinical studies report dose adjustment on day 14 in the presence of SAEs[1-6].

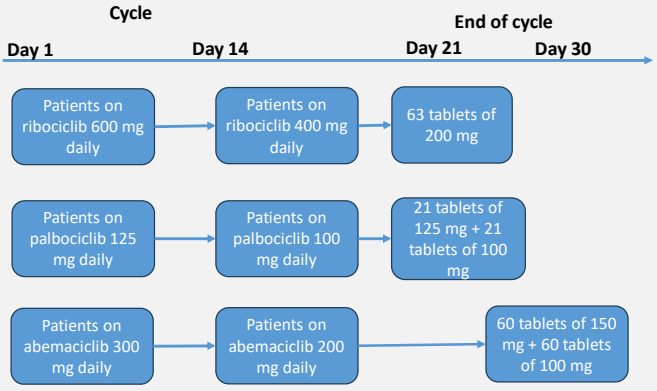
Objective

- To quantify the economical impact and the cost optimization of these three therapies in case a dose reduction is needed in this population.

Methods

- An economic model was built to estimate the cost impact when reducing the dose in HR+ HER2- aBC population on day 14 of the treatment cycle within the month of adjustment (standard follow-up visit).
- A dose reduction was considered for the analysis according to the following pattern only (Figure 1):
- Abemaciclib 300mg daily to 200mg daily for 30 days per cycle (first dispensing of 60 tablets of 150mg and second dispensing of 60 tablets of 100mg) [2,3].
- Palbociclib 125mg daily to 100mg daily for 21 days per cycle (first dispensing of 21 tablets of 125mg and second dispensing of 21 tablets of 100mg) [4]
- Ribociclib 600mg daily to 400mg daily for 21 days per cycle (one dispensing of 63 tablets of 200mg) [5,6]
- Direct costs were included for the treatments from the official source SISMED (USD 2023: 1USD = 4,464COP) [7].

Figure 1. Pattern of dose reduction for abemaciclib, palbociclib and ribociclib



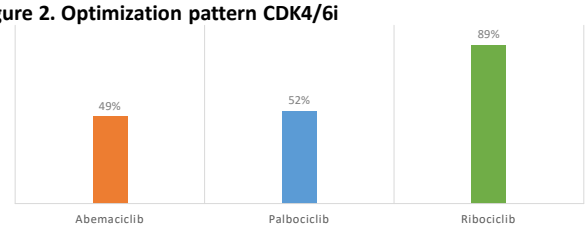
Results

- In the scenario where the dose reduction is made at day 14 after the initial dispensing, the total costs are USD$2,678 for ribociclib, USD$4,954 for palbociclib (first and second dispensing USD$2,752-USD$2,202) and USD$5,813 for abemaciclib (first and second dispensing USD$3,488-USD$2,325) (Table 1)
- The optimization for ribociclib is 89% (11,200mg/12,600mg), 52% for palbociclib (2,450mg/4,725mg) and 49% for abemaciclib (7,400mg/15,000mg) (Figure 2).

Table 1. Dose Adjustment optimization: abemaciclib vs palbociclib vs ribociclib

Initial Treatment	Abemaciclib 300 mg	Palbociclib 125 mg	Ribociclib 600 mg
Cost per mg	$ 0.39	$ 1.05	$ 0.21
Presentation dose (mg)	150	125	200
Daily tablets	2	1	3
Treatment days	30	21	21
Month Tablets	60	21	63
Monthly dose (mg)	9000	2625	12600
Monthly Treatment Cost	$ 3,488.08	$ 2,752.42	$ 2,678.15
Day Adjustment Decision	14	14	14
Pending days of the Cycle	16	7	7
Dose per month consumed (mg)	4200	1750	8400
Tablets consumed	28	14	42
Tablets pending use	32	7	21
Dose month (mg) pending use	4800	875	4200
Dose adjustment	**Abemaciclib 200 mg**	**Palbociclib 100 mg**	**Ribociclib 400 mg**
Presentation dose (mg)	100	100	200
New daily dose (mg)	200	100	400
Daily tablets	2	1	2
Tablets to complete cycle	32	7	14
Missing dose (mg)	3200	700	2800
Possibility of using prior dispensing	NO	**NO**	YES
New dose acquired month (mg)	6000	2100	0
Cost New dose purchased month	$ 2,325.39	$ 2,201.94	$ -
Total cycle cost	$ 5,813.47	$ 4,954.36	$ 2,678.15
Cost used	$ 2,867.98	$ 2,568.93	$ 2,380.58
Unused Cost (Waste)	$ 2,945.49	$ 2,385.43	$ 297.57
Optimization	49%	52%	89%
Number of Cohort Patients	30	30	30
Dose Adjustment Probability	43.0%	34.4%	44.6%
Patients who would require dose adjustment	12.90	10.32	13.38
Cost of patients with dose adjustment	$ 74,993.82	$ 51,128.99	$ 35,833.64
Cost used	$ 36,996.95	$ 26,511.33	$ 31,852.12
Unused Cost (Waste)	$ 37,996.87	$ 24,617.66	$ 3,981.52

Figure 2. Optimization pattern CDK4/6i



Conclusions

- Dose reductions due to SAEs could have an economic impact on medication wastage for payers.
- Ribociclib shows a lower wastage in case of dose reduction and consequently a lower cost impact versus palbociclib and abemaciclib.

References

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Disclosures

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