Correlation between extension survival benefits and incremental costs of oncology drugs in Portugal: a cross-sectional, regression analysis

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INTRODUCTION

The limited resources of the Portuguese National Health Service make it relevant to understand how costs of oncology drugs relate with their clinical benefits [1,2].

OBJECTIVE

This study aims to assess whether the incremental costs of oncology medicines in Portugal are correlated with improvements in survival outcomes.

METHODS

Reimbursement reports of oncology medicines published by INFARMED, IP between 2018 and 2024 were analysed. Data on intervention and comparator(s), magnitude of added therapeutic value (ATV), type and quality of evidence supporting the decision, overall survival (OS) and progression-free survival (PFS) (medians and hazard ratios [HRs]) were retrieved [3,4]. Public drug prices were collected from portal BASE (public contracts repository). Relationship between OS and PFS improvement (estimated as % of median survival extension and HRs) and incremental treatment costs (until disease progression or death) was assessed through linear regression models. Regression coefficients (β) and coefficients of determination (R2) were estimated. Reimbursement year, magnitude of ATV, type (RCT vs. non-RCT) and quality of evidence were additional covariates assessed in models.

RESULTS

Out of 70 reports, 36 assessed therapeutic value based on OS and 34 based on PFS. No correlation between OS (β: 0,64 [-1,50; 0,28]; R^2: 0,825) and PFS (β : 0,03 [-0,38; 0,43]; R^2: 0,230) median survival improvements and incremental treatment costs was identified. A statistically significant relationship was observed between PFS improvement assessed through HR and incremental costs (β: 4,77 [1,94; 7,59]; R^2: 0,492), but not for OS (β: 0,15; [-0,39 to 0,10]; R^2: 0,758). An inverse relationship between quality of evidence and incremental costs was found when OS was assessed trough HR.

Incremental Costs	
Median	€45,610
Q1	€29,913
Q3	€105,701

Variables	Price outcome variable: treatment cost difference			
	Model 1	**Model 2**	**Model 3**	**Model 4**
OS gain (%)	0,64 (-1,50; 0,28)	-	-	-
OS HR Upper Limit	-	0,15 (-0,39; 0,10)	-	-
PFS gain (%)	-	-	0,03 (-0,38; 0,43)	-
PFS HR Upper Limit	-	-	-	**4,77** (1,94; 7,59)**
Year	0,10 ' (-0,01; 0,20)	0,04 (-0,08; 0,15)	-0,03 (-0,28; 0,23)	-0,07 (-0,29; 0,14)
ATV Magnitude	0,08 (-0,10; 0,27)	0,09 (-0,11;0,28)	-0,10 (-0,79; 0,58)	-0,05 (-0,62; 0,51)
Data Source	**1,60* (0,40; 2,79)**	**1,05* (0,20; 1,91)**	0,57 (-0,55; 1,70)	0,01 (-0,10; 1,01)
Global Evidence Quality	-0,21 ' (-0,43; 0,02)	**-0,27* (-0,51; -0,02)**	-0,02 (-0,86; 0,82)	-0,08 (-0,74; 0,58)
R^2	0,825	0,758	0,230	0,492
Observations	32	35	28	29

CONCLUSIONS

These findings do not support a consistent correlation between improvement of survival outcomes and incremental costs of oncology drugs. The potential lack of value-based cancer drug prices may represent a possible barrier to market access in Portugal.

References

1 Sumaya Abuloha, Benjamin P Harvey, Shu Niu, Alaa Alshehri, Melissa Miri, Katherine Clifford, James Chambers, Mikael Svensson, An analysis of US net cancer drug launch prices and clinical efficacy and certainty of evidence from 2008 to 2022, Health Affairs Scholar, Volume 3, Issue 4, April 2025, qxaf051, https://doi.org/10.1093/haschl/qxaf051

2 Trotta F, Mayer F, Barone-Adesi F, et al. Anticancer drug prices and clinical outcomes: a cross-sectional study in Italy. BMJ Open. 2019;9(12):e033728. Published 2019 Dec 10. doi:10.1136/bmjopen-2019-033728

3 Infarmed – National Authority of Medicines and Health Products, I.P. (2023, February). Pharmacotherapeutic assessment manual: METOD AFT v3.0 [PDF]. https://www.infarmed.pt/documents/15786/1963929/METOD_AFT_v3.0_ENvf_fev2023/b0cb1c54-adca-721a-6466-75ba04cdd542

4 Infarmed – National Authority of Medicines and Health Products, I.P. (n.d.). Methodological guidelines for economic evaluation studies of health technologies [PDF]. https://www.infarmed.pt/documents/15786/4001413/Orienta%C3%A7%C3%B5es+metodol%C3%B3gicas+para+estudos+de+avalia%C3%A7%C3%A3o+econ%C3%B3mica+de+tecnologias+de+sa%C3%BAde+%28EN%29/ebcfd930-94e2-c7e1-100a-ee1df3d76882

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