Is the Scope of Costs Considered in Budget Impact Analyses for Anticancer Drugs Rational? A Systematic Review and Comparative Study

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Objectives

We systematically reviewed whether BIAs for anticancer drugs consider the scope of costs rationally and compared the results of different cost scopes to provide suggestions for future analyses and decision-making.

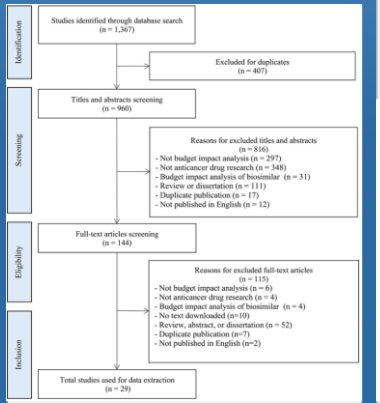

FIGURE 2 | Flow diagram of literature search and study identification.

Methods

- Eligible BIAs published in PubMed, Embase, Web of Science, and the Cochrane Library from 2016 to 2021 were identified based on PRISMA guidelines.
- 15 terms were extracted from the included studies and analyzed how they considered the scope of costs.
- A budget impact model was developed for the introduction of geptanolimab to China's National Reimbursement Drug List to enable a comparison of two cost-scope scenarios (with/without considering subsequent treatment costs).

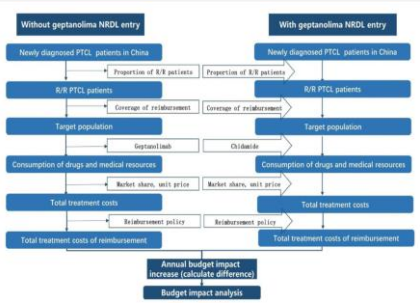

FIGURE 1 | Model structure. NRDL, National Reimbursement Drug List; R/R PTCL, relapsed or refractory peripheral T cell lymphoma.

Results

- 29 studies were included in the systematic review. All considered the costs of anticancer drugs, and 25 (86%) also considered condition-related costs, but only 11 (38%) considered subsequent treatment costs.
- In the comparative study, the predicted budget impacts from 2022 to 2024 were significantly impacted by subsequent treatment costs, with annual differences between the two cost-scope scenarios of $39,546,664, $65,866,161, and $86,577,386 respectively.
- The existing recommendations regarding the scope of costs are summarized in Table 2.

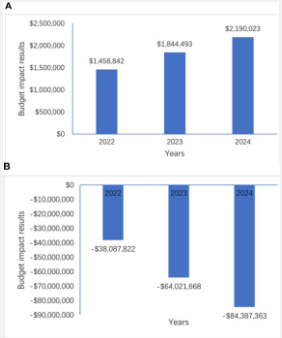

FIGURE 3 | Budget impact results of two cost-scope scenarios, (A) is the budget impact results without considering subsequent treatment costs (B) is the budget impact results with considering Subsequent treatment costs.

TABLE 2 | Summary of key recommendations of cost scopes in existing BIA guidelines.

BIA guidelines		ISPOR (2014)	NICE (2017)	Canada (2020)	France (2018)	Ireland (2018)	Australia (2006)	The Netherlands (2016)	Belgium (2014)	Thailand (2014)	Poland (2004)
Recommended Direct scope of costs costs	Intervention costs	√	√	√	√	√	√	√	√	√	√
	Administration costs	√		√	√	√		√	√	√	√
	Monitoring costs	√		√	√	√		√	√	√	√
	AE costs	√	√	√	√	√	√	√	√	√	√
	Subsequent treatment costs	√	√	√	√	√	√	√	√	√ (Depending on the payer requirement and perspectives)	√
	Indirect costs	√ (When needed)			√ (Depending on perspectives)				√ (When needed)		√ (If possible to predict)

AE, Adverse events; BIA, Budget impact analysis; ISPOR, International Society for Pharmacoeconomics and Outcomes Research; NICE, National Institute for Health and Clinical Excellence of United Kingdom; √, Recommended to consider.

Conclusions

- The scope of costs considered in some existing BIAs for anticancer drugs are not rational. The variations between different cost scopes in terms of budget impact were significant.
- BIAs for anticancer drugs should consider a rational scope of costs that adheres to BIA guidelines.
- Researchers and decision-makers should pay more attention to the scope of costs to achieve better-quality BIAs for anticancer drugs and enhance reimbursement decision-making.