The conflict of interest statement

All presenters have no conflict of interest to declare

Evaluation of Tucatinib for HER2-Positive Breast Cancer Patients with Brain Metastases: A United States-Based Cost-Effectiveness Analysis

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Background and Objective

Background and Objective

- Data source: International Agency for Research on Cancer of WHO latest global cancer burden data for 2020
- **breast cancer (BC):** most commonly diagnosed cancer worldwide

Background and Objective

- human epidermal growth factor receptor 2 (HER2)

  over expression: 20% to 30%

  role: aggressive tumor growth and poor prognosis

- incidence of **brain metastases (BMs)**: 50%

↓

common cause of death

Background and Objective

exploratory analyses derived from the **HER2CLIMB** trial

tucatinib

clinically meaningful benefits

HER2-positive BC patients with BMs including active BMs

expensive

? potential benefit

cost-effectiveness analysis

perspective:United States (US) payer

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Methods

Methods

Markov model

trastuzumab and capecitabine + tucatinib (TTC)

trastuzumab and capecitabine + placebo (PTC)

transition probability:

Kaplan-Meier curves ➡ pseudo-individual patient data

costs: official databases and literature

utility values: published literature and adjusted by adverse events

Methods

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- outcomes: lifetime costs
  quality-adjusted life years (QALYs)
  incremental cost-effectiveness ratio (ICER)
  incremental net health benefit (INHB)

- willingness-to-pay (WTP) : $200,000/QALY

- sensitivity analysis scenario analysis

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Results

Results

Base-Case Analyses

Population	Strategy	Cost ($)	Incr cost($)	QALYs	Incr QALYs	ICER($ /QALY)
BMs	PTC	87,905.23		0.68		
	TTC	503,637.21	415,731.99	1.68	0.99	418,007.01
Active BMs	PTC	81,968.50		0.61		V
	TTC	451,699.62	369,731.12	1.75	1.14	324,465.03

Sensitivity Analyses

One-Way Sensitivity Analyses

driver of the ICER: the cost of tucatinib

Probabilistic Sensitivity Analyses

cost-effective → low

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Conclusions

Conclusions

tucatinib ≠ cost-effective HER2-positive BC patients with BMs

better economics in patients with active BMs

to optimize the cost-effectiveness of tucatinib:

① select favorable population

② offer appropriate drug assistance policies

③ reduce the price of tucatinib

Thanks for listening!

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