

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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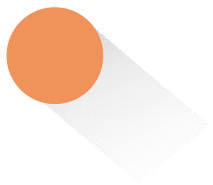
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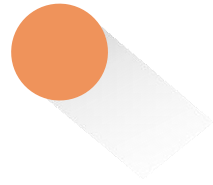
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Background and Objective

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 + $\left\{ \begin{array}{ll} \text{tucatinib} & \text{(TTC)} \\ \text{placebo} & \text{(PTC)} \end{array} \right.$



transition probability:

Kaplan-Meier curves $\rightarrow$ pseudo-individual patient data



costs: official databases and literature

utility values: published literature and adjusted by adverse events

- 📖 **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



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

 tucatinib $\neq$ 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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