Cost-Effectiveness of Pemigatinib for Patients With Advanced Intrahepatic Cholangiocarcinoma and *FGFR2* Fusions/Rearrangements: 2024 FIGHT-202 Trial Final Results

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Background

- In 2020, based on promising results from the Phase II FIGHT-202 trial, the U.S. Food and Drug Administration granted accelerated approval to pemigatinib for the treatment of adults with previously treated, unresectable locally advanced or metastatic cholangiocarcinoma with fibroblast growth factor receptor 2 (*FGFR2*) fusions.
- In 2023, Taiwan's National Health Insurance Administration (NHIA) began reimbursing pemigatinib for patients with advanced intrahepatic cholangiocarcinoma (ICC) with *FGFR2* fusions or rearrangements. However, early cost-effectiveness analyses (CEA) showed that pemigatinib was not cost-effective at the listing price of NT$12,500 (US$390.63).
- In 2024, the updated Phase II FIGHT-202 trial, with extended follow-up, demonstrated improved efficacy of pemigatinib for patients with advanced ICC and *FGFR2* fusions/rearrangements

Objective

- To update the lifetime cost-effectiveness of pemigatinib as a second-line therapy compared with mFOLFOX or 5-FU/LV for advanced ICC with *FGFR2* fusions/rearrangements, from Taiwan NHIA's perspective.

Methods

- The analytical framework and parameters of this decision model are listed below:

Table 1. Analytical framework and model inputs

Population	Patients with advanced ICC and *FGFR2* fusions/rearrangements who failed first-line gemcitabine-based chemotherapy
Intervention	Pemigatinib
Comparator	(1) mFOLFOX, (2) 5-FU/LV
Cost	Genetic testing fee, medication cost per 3 week (pemigatinib: NT$175,000 mFOLFOX: NT$23,693, 5-FU/LV: NT$10,220), and nonmedication cost
Outcome	Total cost, Quality-adjusted life-years (QALYs)
CEA outcome	Incremental cost-effectiveness ratio (ICER) and incremental net monetary benefit (INMB)
Study design	3-state partitioned survival model (progression-free, progressed disease [PD], and death)
Perspective	NHIA, Taiwan
Time horizon	40 years
Discount rate	3% per year to costs and outcomes
Willingness-to-pay	3 times the GDP per capita in 2023 (NT$3,023,055)
Scenario analysis	■ Following previous CEA study setting ■ Using updated efficacy of NIFTY trial ■ Using updated efficacy of NIFTY and FIGHT-202 trials
Sensitivity analysis	■ Break-even analysis ■ Deterministic sensitivity analysis (DSA) ■ Probabilistic sensitivity analysis (PSA) ■ Value of Perfect Information (EVPI)
Parameter source	■ Efficacy data obtained from the ABC-06, updated NIFTY, and updated FIGHT-202 trials. ■ Cost data were based on NHI listing prices and literature. ■ Utility data were sourced from existing literature.

Base-case results

- Compared to mFOLFOX, pemigatinib gained 1.2 QALYs with additional costs of NT$3,107,559, resulting in an ICER of NT$2,600,251 per QALY. Against 5-FU/LV, it gained 1.27 QALYs with incremental costs of NT$3,338,833 and an ICER of NT$2,628,629 per QALY. Both ICERs were below the threshold of three times GDP.

Table 2. Base-case results

	Outcomes			Incremental changes	
Treatment strategy	**Intervention Pemigatinib**	**Comparator 1 mFOLFOX**	**Comparator 2 5-FU/LV**	**Pemigatinib vs. mFOLFOX**	**Pemigatinib vs. 5-FU/LV**
Cost	3,819,351	711,793	480,518	3,107,559	3,338,833
QALY	1.76	0.57	0.49	1.20	1.27
ICER				2,600,251	2,628,629
INMB				505,293	500,992
EVPI/person				60,896	72,063

Sensitivity analysis results

- Despite pemigatinib incurring high cumulative medical costs while prolonging progression-free survival, the break-even points were 7.6 years (mFOLFOX) and 7.7 years (5-FU/LV) (Fig. 1).

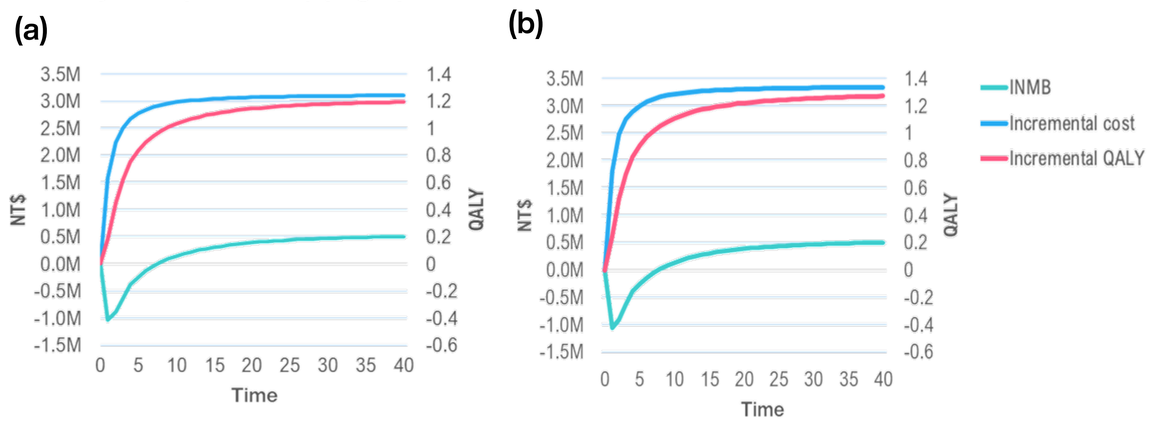

Figure 1. Results of break-even analysis: pemigatinib vs. (a) mFOLFOX, (b) 5-FU/LV

- DSA identified (Fig. 2) pemigatinib's medication cost, PD state utilities, and the time horizon as the most influential factors, potentially driving the ICER above the WTP threshold in both CEA models.

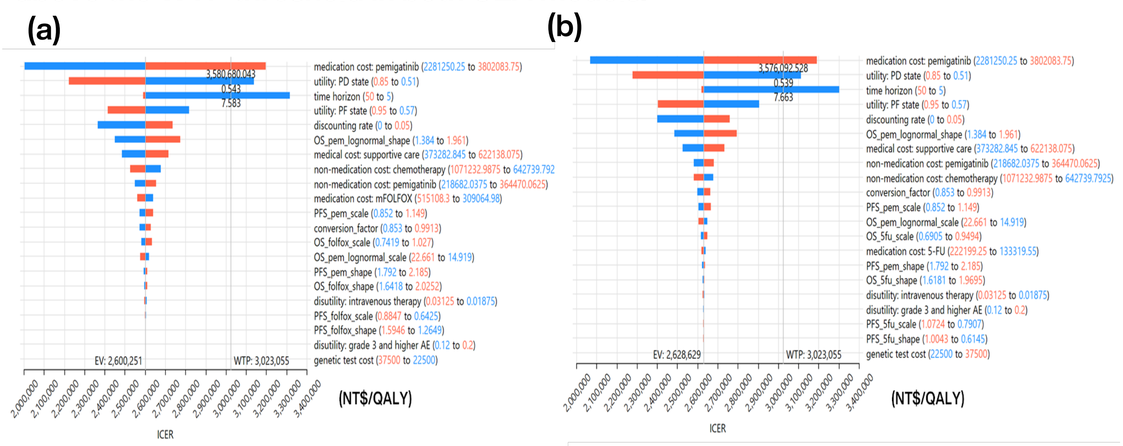

Figure 2. Results of DSA: pemigatinib vs. (a) mFOLFOX, (b) 5FU/LV

- Pemigatinib had a cost-effectiveness probability of 81.4% compared with mFOLFOX and 79.9% compared with 5-FU/LV (Fig. 3).

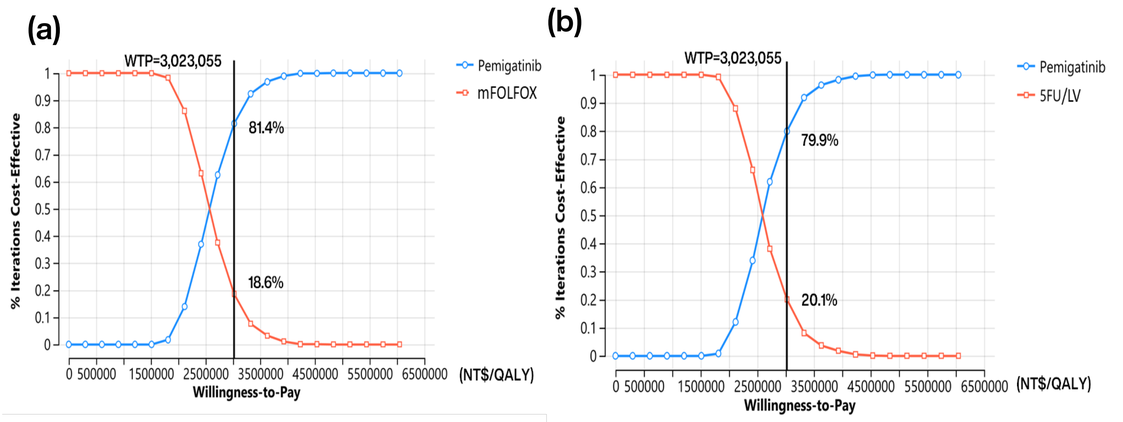

Figure 3. Probability of cost-effectiveness: pemigatinib vs. (a) mFOLFOX, (b) 5-FU/LV

Scenario analysis results

- Pemigatinib was not cost-effective based on prior trial data and remained so even with updated efficacy data from the NIFTY trial for 5-FU/LV.
- With updated data of efficacy from both the FIGHT-202 and NIFTY trials, pemigatinib became cost-effective compared with 5FU/LV and mFOLFOX

Table 3. Scenario analyses results

Scenario analyses	Base-case analysis		Probabilistic sensitivity analysis				
					INMB (NT$)		
WTP threshold of NT$3,023,055 per QALY gain	ICER (NT$/QALY)	INMB (NT$)	Probability of being cost-effective	EVPI/person	Average	lower bound	upper bound
pemigatinib vs. mFOLFOX							
1. Reference case	4,017,622	-663,017	0.6%	925	-644,566	-659,669	-629,462
2. Updated efficacy of 5-FU/LV	4,017,622	-663,017	0.6%	925	-644,566	-659,669	-629,462
3. Updated efficacy of 5-FU/LV and pemigatinib	2,631,611	308,423	80.0%	47,211	302,541	280,121	324,960
pemigatinib vs. 5-FU/LV							
1. Reference case	3,800,829	-601,623	1.2%	1,821	-600,562	-617,878	-583,247
2. Updated efficacy of 5-FU/LV	3,923,939	-667,063	0.8%	1,055	-665,210	-683,216	-647,205
3. Updated efficacy of 5-FU/LV and pemigatinib	2,664,647	321,360	79.2%	59,306	281,896	256,939	306,853

Conclusions

- Based on the latest efficacy data, pemigatinib is cost-effective compared to mFOLFOX and 5-FU/LV for advanced ICC patients with *FGFR2* fusions under Taiwan NHI's conditional pricing. This highlights the importance of mature survival data and lifetime simulation in health economic evaluations.

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