Cost-effectiveness of dostarlimab plus chemotherapy for primary advanced or recurrent endometrial cancer from Taiwan's National Health Insurance perspective

Digital poster

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Background

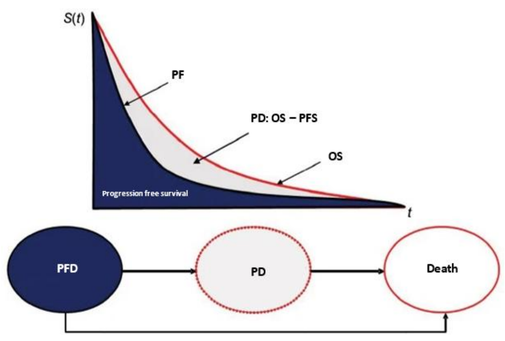
- Endometrial cancer is the most common type of uterine cancer worldwide, with an estimated 3,000 new patients diagnosed in Taiwan every year.[1]
- Approximately 20% of patients are diagnosed with advanced or metastatic disease (Stage III or IV) and around 13% who are diagnosed at early stages will later experience disease recurrence, both of which are associated with worsening prognosis.[1]
- In the phase III RUBY trial, dostarlimab in combination with carboplatin-paclitaxel (CP) demonstrated statistically significant progression-free survival and overall survival in patients with primary advanced or recurrent endometrial cancer (pA/r EC), with more pronounced benefits in patients with mismatch repair-deficient (dMMR) or microsatellite instability-high (MSI-H) tumors.[2,3]

Aims

- This study aims to evaluate the cost-effectiveness of dostarlimab plus CP as first-line treatment in the overall pA/r EC population and dMMR/MSI-H patients, from the perspective of Taiwan's National Health Insurance.
- A willingness-to-pay threshold of **TWD 3,300,000**, equivalent to three times Taiwan's per capita GDP in 2024,[4] was selected for the cost-effectiveness evaluation.

Methods

Model structure



A **partitioned survival model** with three mutually exclusive states (progression-free disease, progressed disease, and death) was used to assess the cost-effectiveness of dostarlimab plus CP compared with standard chemotherapy.

Health resource use differed between PFD and PD, such as hospital visits, computed tomography scans, and clinical monitoring. These health state costs, along with diagnostic, treatment, adverse event management, and end-of-life costs, were all considered in the analysis.

Model settings

Perspective	Taiwan's National Health Insurance
Target population	First-line treatment for primary advanced or recurrent endometrial cancer in patients with demographic characteristics adapted to represent the Taiwanese population (mean age: 56.8 years; body weight: 59.0 kg)
Intervention	Dostarlimab + carboplatin-paclitaxel
Comparator	Carboplatin-paclitaxel
Time horizon	Life-time
Cycle length	7 days; a half-cycle correction was not applied due to the short cycle length
Discount rate	3% for both costs and outcomes

Model inputs

Clinical and safety data

Survival curves (OS, PFS, and time to treatment discontinuation) were estimated from patient-level data in the RUBY trial.

Costs

Direct medical costs were sourced from Taiwan NHI price lists, published literature and expert opinion.

Utilities and disutilities

QALYs were calculated using utility values from EQ-5D-5L data in the RUBY trial. The impact of grade ≥ 3 AEs on HRQOL was incorporated.

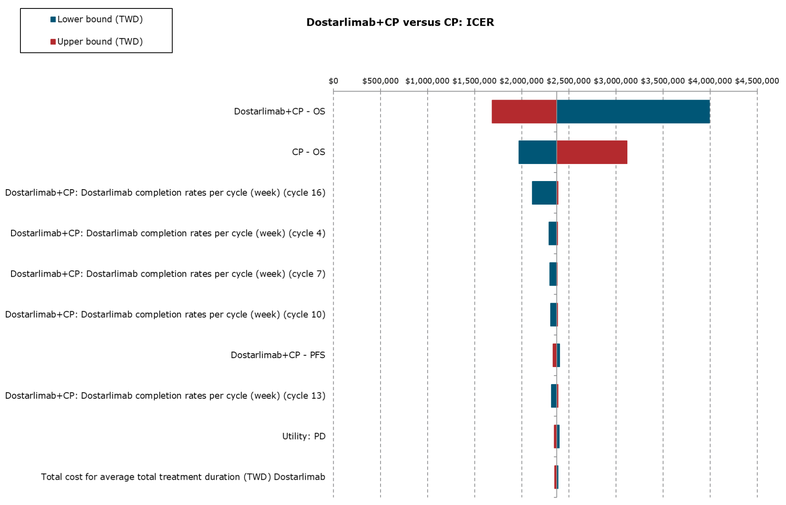
Results

Table 1: **Results of the base case scenario in the overall and dMMR/MSI-H populations.**

Population	Overall pA/r EC			dMMR/MSI-H		
	Dostarlimab + CP	CP	Incremental	Dostarlimab + CP	CP	Incremental
Life years	5.61	3.66	1.95	10.83	4.03	6.80
QALYs	3.93	2.59	1.34	7.72	2.86	4.86
Costs	TWD 3,433,388	TWD 262,378	TWD 3,181,010	TWD 5,003,122	TWD 367,390	TWD 4,635,732
Diagnostic costs	TWD 0	TWD 0	TWD 0	TWD 26,513	TWD 0	TWD 26,513
Treatment costs	TWD 3,191,956	TWD 8,503	TWD 3,183,453	TWD 4,599,306	TWD 8,658	TWD 4,590,648
Health state costs	TWD 222,680	TWD 167,062	TWD 55,619	TWD 362,581	TWD 169,005	TWD 193,576
Adverse event costs	TWD 8,160	TWD 8,694	-TWD 534	TWD 8,160	TWD 8,694	-TWD 534
Subsequent treatment costs	TWD 20,591	TWD 78,119	-TWD 57,528	TWD 6,562	TWD 181,034	-TWD 174,472
ICER per QALY			**TWD 2,370,589**			**TWD 954,145**

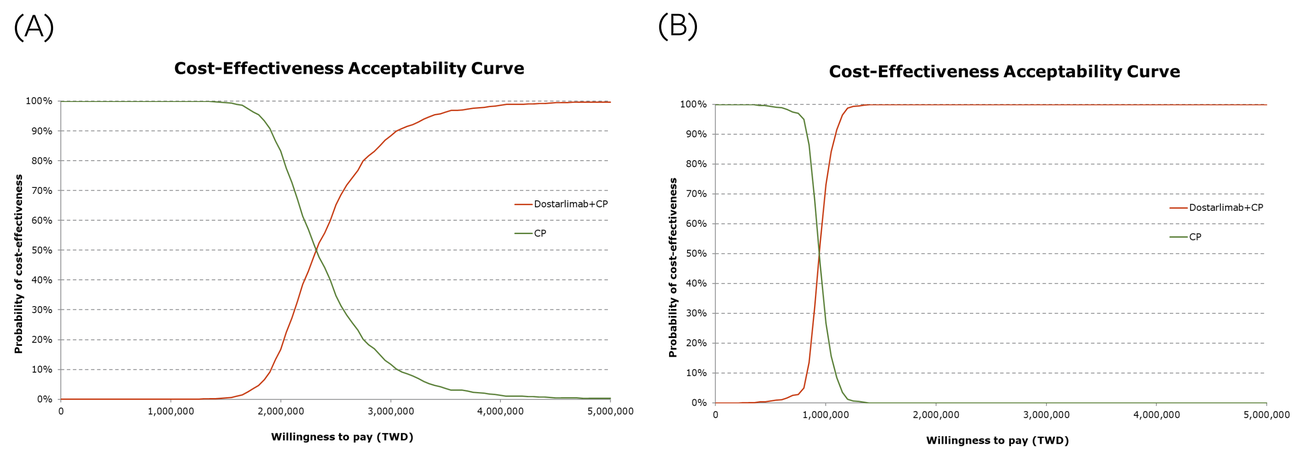
In the overall population, the model predicted gains of 1.95 LYs and 1.34 QALYs with dostarlimab plus CP compared with CP; costs were TWD 3,181,010 higher with dostarlimab plus CP, resulting in an ICER of TWD 2,370,589 per QALY gained.
In the dMMR/MSI-HI population, gains of 6.80 LYs and 4.86 QALYs were predicted with dostarlimab plus CP compared with CP; costs were TWD 4,635,732 higher, resulting in an ICER of TWD 954,145 per QALY gained.

Figure 1: **One-way sensitivity analysis of cost-effectiveness of dostarlimab plus CP compared with CP in the overall population.**



Sensitivity analyses identified the overall survival benefits of dostarlimab plus CP versus CP as the most influential parameter.

Figure 2: **Cost-effectiveness acceptability curves of dostarlimab plus CP and CP in the (A) overall and (B) dMMR/MSI-H populations.**



At a WTP threshold of TWD 3,300,000, dostarlimab plus CP had cost-effectiveness probabilities of 94% and 100% in the overall pA/r EC population and dMMR/MSI-H patients, respectively.

Conclusions

Dostarlimab plus CP is cost-effective compared to CP alone at the WTP threshold of TWD 3,300,000 per QALY, regardless of mismatch repair status.

Abbreviations

CP, carboplatin-paclitaxel;
dMMR/MSI-H, mismatch repair-deficient, microsatellite instability-high;
HRQOL, health-related quality of life; ICER, incremental cost-effectiveness ratio;
LY, life year; NHI, National Health Insurance;
OS, overall survival; PFS, progression-free survival;
pA/r EC, primary advanced or recurrent endometrial cancer;
QALY, quality-adjusted life year; WTP, willingness- to-pay.

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