Immunotherapy for dMMR Endometrial Cancer: A Cost-Effectiveness Analysis

EE264

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Objectives:

Few treatment options exist for patients with advanced or recurrent endometrial cancer (EC) that has progressed after treatment with platinum-based therapy.[1] Dostarlimab and pembrolizumab are approved for patients with advanced cancers that have not responded to prior therapy and are mismatch repair deficient (dMMR).[2,3] **This analysis aimed to add to the evidence on the cost-effectiveness of immunotherapy for advanced or recurrent dMMR EC.**

Methods:

- TREATMENTS: Immunotherapy (pembrolizumab or dostarlimab) versus usual care (pegylated doxorubicin, PLD)
- TIME HORIZON: 25 years
- PERSPECTIVE: Healthcare sector
- METHOD: Partitioned survival model to estimate probabilities of progression free survival, overall survival and death. State probabilities derived from survival curves in the published literature.[4,5]
- COSTS AND UTILITIES: Derived from published literature and government estimates (Table 1). Expressed in 2022 US$
- DISCOUNT RATE: 3%

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Key Conclusions

- Dostarlimab and pembrolizumab led to increases in life expectancy and quality of life compared to PLD.
- Compared to pembrolizumab, dostarlimab resulted in more QALYs gained, at a lower cost per QALY.
- Based on current prices, these therapies would not be considered cost-effective at a willingness-to-pay threshold of $150,000/QALY.
- More work is needed to understand clinical trajectories following treatment with immunotherapy and cycles needed to attain maximum benefit.

Table 1: Key Model Inputs

Transition Probabilities	
Drug	**Distribution**
Doxorubicin	
Progression-free survival	Log-normal (Mean=1.68, SD=0.98)
Overall survival	Log-normal (Mean=2.58, SD=0.94)
Pembrolizumab	
Progression-free survival	Log-normal (Mean=2.58, SD=1.97)
Overall survival	Log-logistic (Shape=1.19, Scale=40.92)
Dostarlimab	
Progression-free survival	Log-normal (Mean=2.71, SD=1.83)
Overall survival	Log-normal (Mean=3.78, SD=1.68)
Utilities	
Description	**Base Value (Lower, Upper)**
Stable disease	0.72 (0.62, 0.82)[6]
Progressed disease	0.63 (0.43, 0.83)[6]
Costs	
Description	**Base Value (Lower, Upper)**
Doxorubicin	$1,680 ($1,344, $2,016)[5,7]
Pembrolizumab	$10,910 ($8,728, $13,092)[4,7]
Dostarlimab, first 4 cycles	$11,038 ($8,830, $13,245)[7,8]
Dostarlimab, subsequent cycles	$22,075 ($17,660, $26,490)[7,8]
Medication administration	$198 ($82, $284)[9]
Physician visit	$130[10]
Cost of care in final year of life	$11,047 ($10,909, $11,184)[11]
Per-cycle cost of third line therapy	$12,916 ($0, $46,820)[12]

Results:

- Pembrolizumab was extended dominated by dostarlimab (Table 2).
- Neither immunotherapy was cost-effective at a willingness-to-pay threshold of $150,000 per QALY (Table 2).
- Results were most sensitive to the costs of third line therapy following progression and maximum cycles of immunotherapy administered (Figure 1).

Table 2: Base Case Results

	Life Years	QALYs	Costs	ICER
Doxorubicin (PLD)	1.15	0.77	$101,121	
Pembrolizumab	4.33	2.97	$713,246	$278,123
Dostarlimab	4.99	3.39	$804,941	$268,910

Figure 1A: One-Way Sensitivity Analysis: Pembrolizumab vs PLD

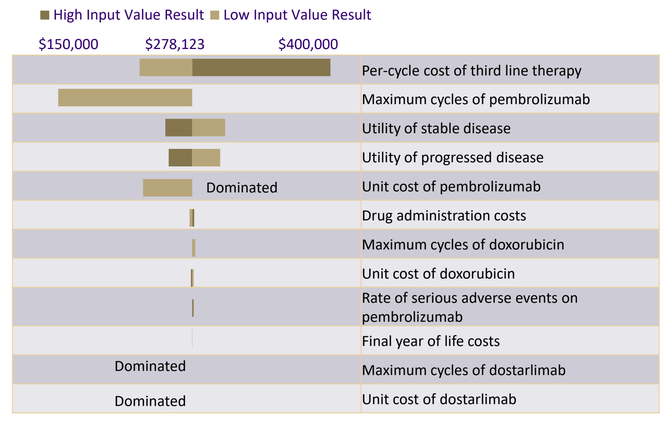

Figure 1B: One-Way Sensitivity Analysis: Dostarlimab vs PLD