This Evidence-to-Decision (EtD) framework addresses **dostarlimab + chemotherapy** for **endometrial cancer dMMR/MSI-H.**

QUESTION

Should immune check	Should immune checkpoint inhibitors vs. alternative regimens be used for adult endometrial cancer?					
POPULATION:	adult endometrial cancer (EC)					
INTERVENTION:	nmune checkpoint inhibitors (ICIs)					
COMPARISON:	cernative regimens					
MAIN OUTCOMES:	overall survival; progression-free survival; health-related quality of life; adverse events (CTCAE ≥ 3)					
SETTING:	treatment in the palliative 1st line setting					
BACKGROUND:	application includes one ICI-containing treatment regimen for adult endometrial cancer dMMR/MSI-H:					
	dostarlimab + chemotherapy (ESMO-MCBS non-curative score = 4)					

SUMMARY OF JUDGEMENTS

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	Yes		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	Moderate	Large		Varies	Don't know
REDUCTION IN UNDESIRABLE EFFECTS	Increased harms and toxicity	No/Trivial	Small	Moderate	Large	Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	Low	Moderate	High			No included studies
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	Don't know
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	Varies	Don't know
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	No included studies
EQUITY	Reduced	Probably reduced	Probably no impact	Probably increased	Increased	Varies	Don't know
ACCEPTABILITY	No	Probably no	Probably yes	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	Probably yes	Yes		Varies	Don't know
AVAILABILITY	Not available in most settings	Probably not available in most settings	Probably available in most settings	Available in most settings		Varies	Don't know

ASSESSMENT

Problem Is the problem a priority? JUDGEMENT RESEARCH EVIDENCE o No An application addressing ICIs for the treatment of 12 adult cancer entities in the palliative 1st line setting has been submitted for consideration by the Expert o Probably Committee. This Evidence-to-Decision framework focuses on EC, for which one ICI is proposed: dostarlimab. no o Probably The incidence of endometrial cancer has increased over the last two decades. Over 400,000 incident cases of EC were diagnosed and over 90,000 related deaths occurred worldwide in 2019. Finally, it is the sixth most common cancer among women worldwide (1). The standard of care includes chemotherapy, which has yes Yes limited benefit for overall survival and is associated with a reduced quality of life in treated patients because of its cytotoxic effects. o Varies o Don't know **Desirable Effects** How substantial are the desirable anticipated effects? JUDGEMENT RESEARCH EVIDENCE o Trivial or The application presents one randomized trial as evidence for the desirable effects of dostarlimab + chemotherapy for EC (2-5). no o Small Dostarlimab-based treatment regimens compared to SoC for dMMR/MSI-H endometrial carcinoma o Moderate Patient or population: dMMR/MSI-H endometrial carcinoma Carge **Intervention:** Dostarlimab-based treatment regimens (dostarlimab + carboplatin + paclitaxel) o Varies Comparison: SoC (carboplatin + paclitaxel) o Don't Anticipated absolute effects* (95% CI) know Risk with dostarlimab-Certainty of based treatment Relative effect № of participants the evidence Outcomes Risk with SoC regimens (95% CI) (studies) (GRADE) Comments At 2 years 84 per 100 57 per 100^a HR 0.32 (71 to 91) Overall survival (OS) 118 $\Theta\Theta\Theta$ Dostarlimab-based treatment regimens may result (0.17 to 0.63) (1 RCT)b Low^{c,d,e} follow-up: median 36.6 months in a large increase in overall survival. At 3 years [death] 78 per 100 46 per 100 (61 to 88)

	The median overall survival was 31.4 months	The median OS was 66.7 months more (18.4 more to 153.3 more) ^f				
Progression-free survival (PFS) follow-up: median 36.6 months	24 per 100	67 per 100 (49 to 80)	HR 0.28 (0.16 to 0.50) [disease progression or death]	118 (1 RCT)	⊕⊕⊕○ Moderate ^{d,e}	Dostarlimab-based treatment regimens likely results in a large increase in progression-free survival.
Global Health Score/Quality of Life (GHS/QoL) assessed with: EORTC-QLQ C30 Scale from: 0 to 100 follow-up: 19 weeks from baseline	The mean GHS/QoL was - 5.41 change score from baseline ^g	MD 9.38 change score from baseline higher (5.45 higher to 13.31 higher)	-	115 (1 RCT)	⊕⊕⊖⊖ Low ^{d,e,h}	Dostarlimab-based treatment regimens may result in a slight increase in global Health Score/Quality of Life.

*The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI). CI: confidence interval; HR: hazard ratio; MD: mean difference; RR: risk ratio

Explanations

- a. Baseline risk at 2-year and 3-year timepoints as directly reported in OS update publication
- b. RUBY (NCT03981796)
- c. Downgraded for indirectness; 38.5% of patients who received the control therapy were subsequently treated with ICIs, which might lead to an underestimation of the effect
- d. Downgraded for imprecision due to small sample size and risk of beta-error (OIS criterion)
- e. Inconsistency not applicable (single trial only); publication bias not applicable due to prespecified selection process
- f. The corresponding difference in median survival time was calculated using the directly reported median survival point estimate from the relevant trial publication and the pooled HR and CIs (assuming proportional hazards throughout the trial follow-up period). In RUBY the median OS was not reached yet in the intervention group
- g. Datapoints extracted from the graph in the relevant publication
- h. Downgraded for imprecision; CI crosses the line of minimal important change at 10

Magnitude of effect judgements:

Domain	Judgement per o	Judgement across desirable critical outcomes	
ICIs	Overall survival Health-related quality of life		Overall
Dostarlimab-containing treatment regimen	Large	Small	Large

Additional considerations:

In 2019, the Expert Committee recommended adoption of a threshold for benefit of at least 4-6 months overall survival gain and without detriment to quality of life for cancer medicines or regimens to be considered as candidates for inclusion on the WHO EML (6). Based on this recommendation, the following decision rules were considered in judging the magnitude of effects:

- The outcomes overall survival and health-related quality of life were considered of critical importance to patients with EC more weight was placed on them in the decision-making process when compared to progression-free survival and adverse events.
- ICIs demonstrating a median overall survival benefit greater than the recommended WHO threshold (i.e. > 4-6 months) would be considered to have a large benefit.

- ICIs demonstrating a median overall survival benefit within the range of the recommended WHO threshold (i.e. between 4 and 6 months) would be considered to have a moderate benefit.
- ICIs demonstrating a median overall survival benefit smaller than the recommended WHO threshold (i.e. < 4-6 months) would be considered to have a small benefit.

The median overall survival was estimated to be 66 months more in people treated with the dostarlimab-containing treatment regimen. The ESMO-MCBS Scorecard reported a score of 4 for the dostarlimab-containing treatment regimen trial. The magnitude of desirable effect for the outcome overall survival, based on the point estimate, WHO benefit threshold and ESMO-MCBS Scorecard, was judged as large.

In terms of health-related quality of life, the dostarlimab-containing treatment regimen may result in a slight increase (low certainty evidence).

The overall judgement related to the magnitude of desirable effects cannot be lower than the highest rating across critical outcomes. Therefore, the overall magnitude of desirable effects was judged as large for the dostarlimab-containing treatment regimen.

Undesirable Effects

How substantial is the reduction in undesirable anticipated effects?

JUDGEMENT

RESEARCH EVIDENCE

Increased harms and toxicity

Magnitude

in harms and toxicity:

o Trivial or

o Don't know

no
o Small
o Moderate
o Large
o Varies

of reduction

The application presents one randomized trial as evidence for the undesirable effects of dostarlimab + chemotherapy for EC (2-5).

Dostarlimab-based treatment regimens compared to SoC for dMMR/MSI-H endometrial carcinoma

Patient or population: dMMR/MSI-H endometrial carcinoma

Intervention: Dostarlimab-based treatment regimens (dostarlimab + carboplatin + paclitaxel)

Comparison: SoC (carboplatin + paclitaxel)

	Anticipated absol	ute effects* (95% CI)						
Outcomes	Risk with SoC	Risk with dostarlimab- based treatment regimens	Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments		
Adverse events (CTCAE ≥ 3) irrespective of treatment attribution	60 per 100	72 per 100 (64 to 82)	RR 1.20 (1.06 to 1.36)	487 (1 RCT)	⊕⊕⊖⊖ Low ^{a,b}	Dostarlimab-based treatment regimens may result in a moderate increase in adverse events (CTCAE ≥ 3) irrespective of treatment attribution.		

^{*}The risk in the intervention group (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI). CI: confidence interval; HR: hazard ratio; MD: mean difference; RR: risk ratio

Explanations

- a. Adverse events were not reported by MMR/MSI-status but only for the ITT population; the potentially worse disease response in the control group and treatment change upon progression may have shortened safety follow-up, biasing the outcome
- b. Downgraded for imprecision; the CI crosses the line of appreciable harm at 1.25

c.

Additional considerations:

Low certainty evidence showed that dostarlimab-containing treatment regimens may result in a moderate increase in adverse events when compared to standard of care.

Certainty of evidence

What is the overall certainty of the evidence of effects?

JUDGEMEN	1
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RESEARCH EVIDENCE

Very low Low Moderate High No included

Domain	Judg	Judgement across critical outcomes		
ICIs	Overall survival	Health-related quality of life	Adverse events	Overall
Dostarlimab-containing treatment regimens	Low	Low	Low	Low
Dostariiriab containing treatment regimens	LOW	LOW	LOW	LOW

Additional considerations:

Across the critical outcomes, the lowest certainty of evidence rating was low for the dostarlimab-containing treatment regimen.

Values

studies

Is there important uncertainty about or variability in how much people value the main outcomes?

JUDGEMENT

RESEARCH EVIDENCE

o Important uncertainty or variability o Possibly important uncertainty or variability o Probably no important uncertainty or variability or variability or No important

uncertainty

<mark>or</mark> variability A systematic review of qualitative research identified 17 studies published between 2017 and 2022 that addressed the experience of patients considering or using checkpoint inhibitors in cancer (7). Overall, patients viewed immune checkpoint inhibitors positively when compared to other anti-cancer treatments, noting newfound hope, fewer or more manageable treatment-related side effects, and among those experiencing treatment success, improved quality of life when compared to chemotherapy and radiation therapy. In some cases, patients were uncertain about response durability long-term and checkpoint inhibitor-specific adverse events. Patient concerns around checkpoint inhibitors may be mitigated, at least in part, by positive patient-practitioner relationships and support from other patients with lived checkpoint inhibitor experience by way of community groups. Further, fatigue is a common checkpoint inhibitor-specific adverse event. Implementing supportive care programs can help patients undergoing checkpoint inhibitor treatment cope with fatigue and maximize their quality of life.

It was noted that most studies included in this systematic review omitted patients that discontinued checkpoint inhibitor treatment due to serious adverse events or failed to respond to checkpoint inhibitor treatment limiting our understanding of patient experiences with checkpoint inhibitors in this regard.

Importance of uncertainty and variability of how people value outcomes					
ICIs	Net balance	Judgement			
		No important uncertainty or			
Dostarlimab-containing treatment regimens Large net desirable variability					

Additional considerations:

A judgement was made that how much people value the main outcomes, including overall survival, lies on a spectrum, and depends on the magnitude of benefit and harm from treatment. In a situation with trivial benefit and large harm, it was inferred that most people would not choose to pursue treatment if available. In a situation with large benefit and trivial harm, it was inferred that all or almost all people would choose to pursue treatment if available.

Dostarlimab-containing treatment regimens may result in a large increase in OS (66 months), may increase health-related quality of life slightly and may increase adverse events when compared to standard of care. Based on this and the ESMO-MCBS Scorecard, it was judged that dostarlimab-containing treatment regimens offer a large net desirable effect and people would have no important uncertainty or variability in how much they value the main outcomes, particularly preferring avoiding premature death.

Balance of effects

Does the balance between desirable and undesirable effects favor the intervention or the comparison?

o Favors the
comparison
 Probably

favors the comparison o Does not

favor either

intervention

the

or the comparison o Probably favors the intervention

JUDGEMENT

RESEARCH EVIDENCE

ICIs	Net balance	Values	Certainty of evidence	Balance of effects
Dostarlimab-containing treatment regimens	Large net desirable	No important uncertainty or variability	Low	Favors the intervention
		•		

Additional considerations:

A judgement based on the net balance between desirable and undesirable effects, patient values and the certainty of evidence was made that the balance of effects favors dostarlimab-containing treatment regimens.

Favors the intervention

o Varies o Don't know

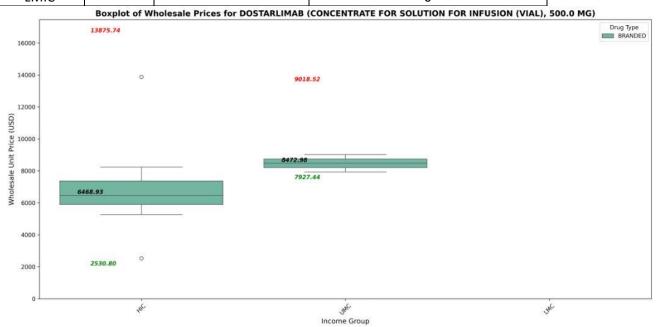
Resources required

How large are the resource requirements?

JUDGEMENT	RESEARCH EVIDENCE						
Large costs	Median wholesale unit price (USD) for dostarlimab (concentrate for solution for infusion, 500 mg) across World Bank income levels*:						
o Moderate	Income	Income Median IQR Sample size					

costs
o Negligible
costs and
savings
o Moderate
savings
o Large
savings
o Varies
o Don't
know

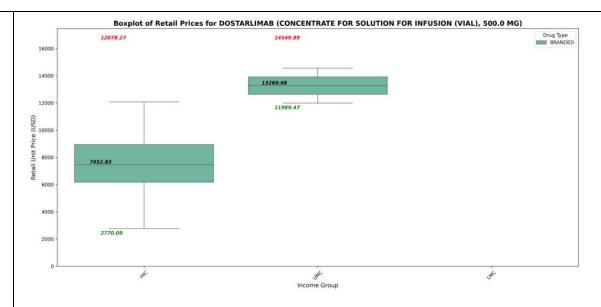
level			based on number of countries
HIC	6468.93	5892.33 to 7367.40	20
UMIC	8472.98	8200.21 to 8745.75	1
LMIC	-	-	0



Source: author derived calculation based on most recent available wholesale prices (as of November 2024) extracted from GlobalData Price Intelligenc (POLI) and Eversana NAVLIN Price & Access datasets. Latest publicly available country-specific prices may be accessed via sources listed here, where available: https://www.who.int/teams/health-product-and-policy-standards/medicines-selection-ip-and-affordability/affordability-pricing/med-price-info-source

Median retail unit price (USD) for dostarlimab (concentrate for solution for infusion, 500 mg) across World Bank income levels*:

Income level	Median	IQR	Sample size based on number of countries
HIC	7452.83	6179.63 to 8939.87	20
UMIC	13269.68	12629.58 to 13909.78	1
LMIC	-	-	0



Source: author derived calculation based on most recent available retail prices (as of November 2024) extracted from GlobalData Price Intelligenc (POLI) and Eversana NAVLIN Price & Access datasets. Latest publicly available country-specific prices may be accessed via sources listed here, where available: https://www.who.int/teams/health-product-and-policy-standards/medicines-selection-ip-and-affordability/affordability-pricing/med-price-info-source

Additional considerations:

Direct evidence addressing the unit price of dostarlimab was available.

Relative to other EML medicines, the costs of dostarlimab at the current unit pricing are large. Most data were from HICs. There were no data available for LMICs and LICs. Nonetheless, harnessing pricing dynamics is needed to promote implementation and affordable use of dostarlimab at the country level.

Cost effectiveness

Does the cost-effectiveness of the intervention favor the intervention or the comparison?

o Favors the comparison o Probably favors the comparison o Does not favor either the

JUDGEMENT

RESEARCH EVIDENCE

Evidence addressing cost-effectiveness of dostarlimab plus carboplatin-paclitaxel versus carboplatin-paclitaxel for primary advanced or recurrent endometrial cancer (mismatch repair-deficient (dMMR) or microsatellite instability-high (MSI-H)) was available from the United States (HIC) (8).

Country	Income level	WTP threshold	ICER	Cost-effective?
United States	HIC	USD 150,000 / QALY	USD 57,151 per QALY	Yes

intervention or the comparison o Probably favors the intervention o Favors the intervention o Varies o No included

studies

Empirical evidence estimating cost-effective thresholds based on health expenditures per capita and life expectancy at birth was available for 174 countries (9). As of 2019, the following cost-effectiveness thresholds in USD per QALY were estimated for each country income level. The authors noted that their empirically derived thresholds were lower than those used in many countries. If used, they may result in more conservative health decision-making.

Income				Sample size	
level	Range	Median	IQR	based on number of countries	Cost-effective?
HIC	\$5480-\$95958	\$18,218	\$10229–\$43175	54	Varies
UMIC	\$1108-\$10638	\$4,355	\$2886–\$5301	48	No
LMIC	\$190-\$3249	\$745	\$451-\$1389	49	No
LIC	\$87–\$320	\$163	\$131–\$229	23	No

To help achieve cost-effective use of ICIs across World Bank income settings without compromising efficacy and safety, alternative dosing strategies have been proposed (10). They include electronic rounding, hybrid dosing, lower dose selection, interval extension and shortening of treatment duration. The scientific basis for these alternative dosing strategies is growing and is based on evidence from both clinical trials and pharmacokinetic studies.

Additional considerations:

In the absence of a *de novo* cost-effectiveness model that considers diverse income settings and alternative dosing strategies, a judgement on the cost-effectiveness was made based on a select example and empirically derived cost-effective thresholds.

While the checkpoint inhibitor under consideration for EC had desirable effects, at the current price, it is likely not cost-effective in most settings, particularly in LMICs and LICs, and when diagnostic requirements are considered.

Clinically proven alternative dosing strategies may be an important step in helping achieve cost-effective use of checkpoint inhibitors in more settings.

Equity

What would be the impact on health equity?

JUDGEMENT	RESEARCH EVIDENCE
o Reduced o Probably reduced o Probably no impact o Probably increased o Increased o Varies o Don't	Additional considerations: Despite checkpoint inhibitors being accessible in many HICs, the WHO EML is a global list and the impact on LMICs and LICs was considered. Because the ICI under consideration offers large desirable benefits but is not accessible to patients globally because of its prohibitively high price, a judgement was made that health equity would be reduced. On the other hand, if price decreased substantially, access in disadvantaged populations would improve and health equity would increase.

know Acceptability Is the intervention acceptable to key stakeholders? **JUDGEMENT RESEARCH EVIDENCE** o No A systematic review of qualitative research identified 17 studies published between 2017 and 2022 that addressed the experience of patients considering or using o Probably checkpoint inhibitors in cancer (7). Overall, patients viewed immune checkpoint inhibitors positively when compared to other anti-cancer treatments, noting newfound hope, fewer or more manageable treatment-related side effects, and among those experiencing treatment success, improved quality of life when o Probably compared to chemotherapy and radiation therapy. Of note, hope is key for cancer patient acceptance of further treatment and is associated with improved symptom burden and quality of life and decreased psychological distress. yes o Yes Additional considerations: Varies o Don't Empiric evidence from the patient perspective provides support for the acceptability of immune checkpoint inhibitors. know These immune checkpoint inhibitors are likely not acceptable to most health decision makers and health systems, especially those in LMICs and LICs, due to cost. The large cost of ICIs when compared to other anti-cancer treatments risk diverting resources from health budgets at the expense of other essential medicines. **Feasibility** Is the intervention feasible to implement? JUDGEMENT RESEARCH EVIDENCE o No Diagnostic requirements – immunohistochemistry companion tests – to identify patients with the indication approved for treatment. o Probably The WHO Essential Diagnostics List includes a basic panel for immunohistochemical (IHC) markers for diagnosis of solid tumors, but the panel does not include IHC no testing markers for PDL1 (11). o Probably yes Basic immunohistochemical (IHC) panel for diagnosis of solid tumours o Yes Basic panel of immunohistochemical (IHC) markers for diagnosis of solid tumours Varies o Don't Facility level Diagnostic tests know Laboratory IHC testing markers include desmin, cytokeratin, AE1/AE3, S100, synaptophysin, myogenin, hCG, PLAP,

The interventions are already implemented in many high-income settings. Beyond the large cost, another barrier to implementation is the need for diagnostic

Additional considerations for healthcare-worker training, resources for the management of side-effects and monitoring capabilities.

Oct3/4, NANOG, CD30, CD117/c-kit, WTl, SALL4

Additional considerations:

companion tests. Immunohistochemistry is an important component of the application of immune checkpoint inhibitor treatment in EC.

Availability

What is the regulatory status, market availability and on-the-ground availability/access of the medicine to patients?

JUDGEMENT	RESEARCH EVIDENCE
o Not available in most settings o Probably not available in most settings o Probably available in most settings o Available in most settings o Available in most settings o Varies o Don't know	Pembrolizumab is approved for use in 85 countries worldwide – mainly high-income countries including Canada, the United States, European Union member countries and Japan (12). Data on the availability, out-of-pocket costs, and accessibility of pembrolizumab for melanoma, non-small cell lung cancer, colorectal cancer and renal cell carcinoma were available from the 2023 update to the ESMO Global Consortium Study (13). In HICs, pembrolizumab for melanoma was "almost always available to patients at no cost or on a subsidized basis". In LMICs and LICs, when available, however, pembrolizumab was "generally provided only at full cost as an out-of-pocket expenditure for patients". Although pembrolizumab for melanoma was almost always actually available in HICs (accessibility with a valid prescription), there was important variation in the actual availability across UMICs, LMICs and LICs. Outside of HICs, pembrolizumab for non-small cell lung cancer, colorectal cancer and renal cell carcinoma was more commonly provided as an out-of-pocket expenditure for patients than not – often at full cost to the patient. These data provide indirect evidence regarding the extent of dostarlimab availability for endometrial cancer across World Bank income settings. Additional considerations: ICIs are approved for use in many countries; however, on-the-ground access outside of HICs is limited.

REFERENCES

- 1. Mazidimoradi A, Momenimovahed Z, Khalajinia Z, Allahqoli L, Salehiniya H, Alkatout I. The global incidence, mortality, and burden of uterine cancer in 2019 and correlation with SDI, tobacco, dietary risks, and metabolic risk factors: An ecological study. Health Sci Rep. 2024;7(1):e1835.
- 2. Auranen A, Black D, Sukhin V, Sharma S, Ronzino G, rum LM, et al. SAFETY of DOSTARLIMAB in COMBINATION with CHEMOTHERAPY in PATIENTS with PRIMARY ADVANCED or RECURRENT ENDOMETRIAL CANCER in A PHASE 3, RANDOMIZED, PLACEBO-CONTROLLED TRIAL (ENGOT-EN6-NSGO/GOG-3031/RUBY). International journal of gynecological cancer. 2023;33:A23.
- 3. Mirza MR, Chase DM, Slomovitz BM, dePont Christensen R, Novak Z, Black D, et al. Dostarlimab for Primary Advanced or Recurrent Endometrial Cancer. New England journal of medicine. 2023;388(23):2145-58.
- 4. Powell MA, Bjorge L, Willmott L, Novak Z, Black D, Gilbert L, et al. Overall Survival in Patients with Endometrial Cancer Treated with Dostarlimab plus Carboplatin-Paclitaxel in the Randomized ENGOT-EN6/GOG-3031/RUBY Trial. Annals of oncology: official journal of the european society for medical oncology. 2024;35(8):728-38.
- 5. Valabrega G, Powell MA, Hietanen S, Miller EM, Novak Z, Holloway R, et al. Patient-reported outcomes (PROs) in patients (pts) with mismatch repair deficient (dMMR)/microsatellite instability-high (MSI-H) primary advanced or recurrent endometrial cancer (pA/rEC) in the ENGOT-EN6-NSGO/GOG3031/RUBY trial. Annals of oncology. 2023;34:S513-S4.
- 6. Jenei K, Aziz Z, Booth C, Cappello B, Ceppi F, de Vries EGE, et al. Cancer medicines on the WHO Model List of Essential Medicines: processes, challenges, and a way forward. The Lancet Global Health. 2022;10(12):e1860-e6.
- 7. Yip R, Arnolda G, Lamprell K, Nic Giolla Easpaig B, Chittajallu R, Delaney G, et al. Experience of patients considering or using checkpoint inhibitors in cancer treatment: a systematic review of qualitative research. J Immunother Cancer. 2024;12(1).
- 8. Coleman RL, Lubinga SJ, Shen Q, Walder L, Burton M, Mathews C. Cost-effectiveness of dostarlimab plus carboplatin-paclitaxel for primary advanced or recurrent endometrial cancer from a US payer perspective. Gynecol Oncol. 2024;192:24-31.
- 9. Pichon-Riviere A, Drummond M, Palacios A, Garcia-Marti S, Augustovski F. Determining the efficiency path to universal health

coverage: cost-effectiveness thresholds for 174 countries

based on growth in life expectancy and health expenditures. Lancet Glob Health. 2023;11.

- 10. Malmberg R, Zietse M, Dumoulin DW, Hendrikx JJMA, Aerts JGJV, van der Veldt AAM, et al. Alternative dosing strategies for immune checkpoint inhibitors to improve cost-effectiveness: a special focus on nivolumab and pembrolizumab. The Lancet Oncology. 2022;23(12):e552-e61.
- 11. World Health Organization. WHO Model List of Essential In Vitro Diagnostics 2024 [Available from: https://edl.who-healthtechnologies.org/.
- 12. CPP Investments. CPPIB Acquires Partial Royalty Interest in KEYTRUDA® (pembrolizumab) from LifeArc 2019 [Available from: https://www.cppinvestments.com/newsroom/cppib-acquires-partial-royalty-interest-keytruda-pembrolizumab-lifearc/.
- 13. Cherny NI, Trapani D, Galotti M, Saar M, Bricalli G, Roitberg F, et al. ESMO Global Consortium Study on the availability, out-of-pocket costs, and accessibility of cancer medicines: 2023 update. Ann Oncol. 2025;36(3):247-62.