Policy Brief

January 2025

"OLAPARIB: A Cost-Effective Maintenance Therapy for Newly Diagnosed BRCA Mutated Advanced Ovarian Cancer in India"

RECOMMENDATIONS

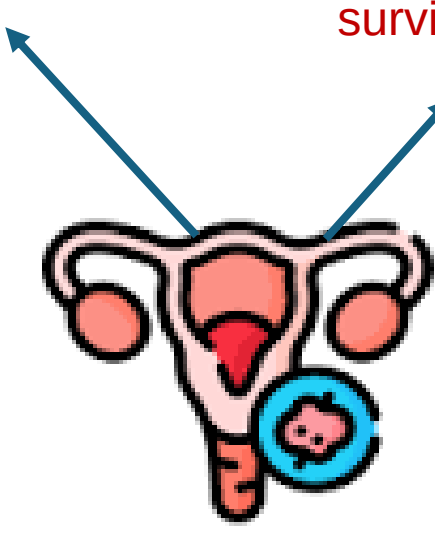
The National Health Authority should consider addition of olaparib as first line maintenance therapy for BRCA mutated (BRCAm) advanced ovarian cancer (AOC) in the health benefit package of AB- PMJAY.

The addition of olaparib maintenance therapy to the health benefit package can be extended to the homologous recombinant deficiency (HRD) positive BRCAwt AOC, after a minimum price reduction of the drug by 23%.

It is pertinent to include biomarker testing like BRCA and HRD in the health benefit package to optimally select the likely patient groups to benefit from maintenance treatment.

Third most common gynecological cancer in women, causing over 30,000 deaths annually in India

70% patients of Advanced Ovarian Cancer relapse within 18 months after primary treatment. Median survival after relapse is 2 years.



OVARIAN CANCER

- Maintenance treatment following primary treatment has proven efficacy in terms of disease control and survival.
- However, its use remains limited owing to significant costs, and non-generalizable international economic evidence for its consideration into the health benefit package in India.

Overview of comparative strategies in molecular profile based population sub-groups of Advanced Ovarian Cancer (Patients in Stage III and IV)

Population	Comparative Strategies
A. In patients with BRCAm AOC (after undergoing debulking surgery and platinum based chemotherapy)	Olaparib Rucaparib Niraparib Routine surveillance
B. In patients with HRD positive BRCAwt AOC (after undergoing debulking surgery and platinum based chemotherapy)	Olaparib Rucaparib Niraparib Routine surveillance
C. In patients with BRCAwt and HRD negative or unknown AOC (after undergoing debulking surgery)	Chemotherapy + Bevacizumab followed by Bevacizumab Chemotherapy followed by routine surveillance

KEY FINDINGS

A. Patients with BRCAm AOC

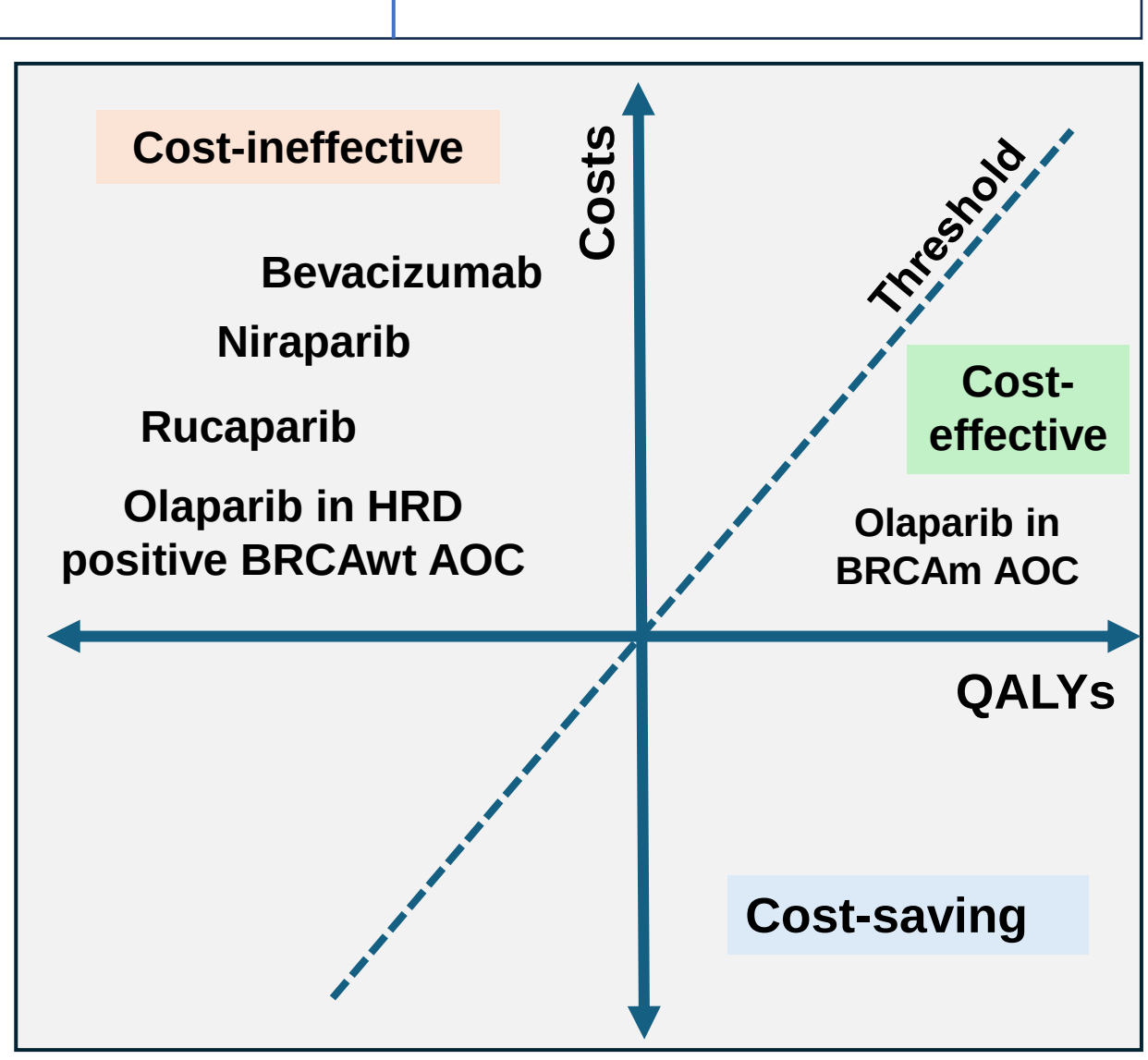
- Olaparib led to gain of 3.71 life years and 2.55 Quality adjusted life years (QALYs) at an additional cost of ₹ 209,271 per patient of AOC.
- The Incremental Cost-Utility Ratio was ₹82,711 per QALY gained, proving olaparib to be cost-effective. (98% probability)
- Administration of rucaparib and niraparib maintenance therapy led to lower lifetime QALYs at higher lifetime costs, in comparison to olaparib.

B. Patients with HRD positive BRCAwt AOC

- Olaparib and niraparib led to positive gains in life years and QALYs, but were not found to be cost-effective at current prices.

C. Patients with BRCAwt and HRD negative/unknown AOC

- Bevacizumab was not cost-effective when compared to routine surveillance.



A 23% price drop (from price of ₹15,000) would make olaparib cost-effective for HRD-positive BRCAwt AOC.

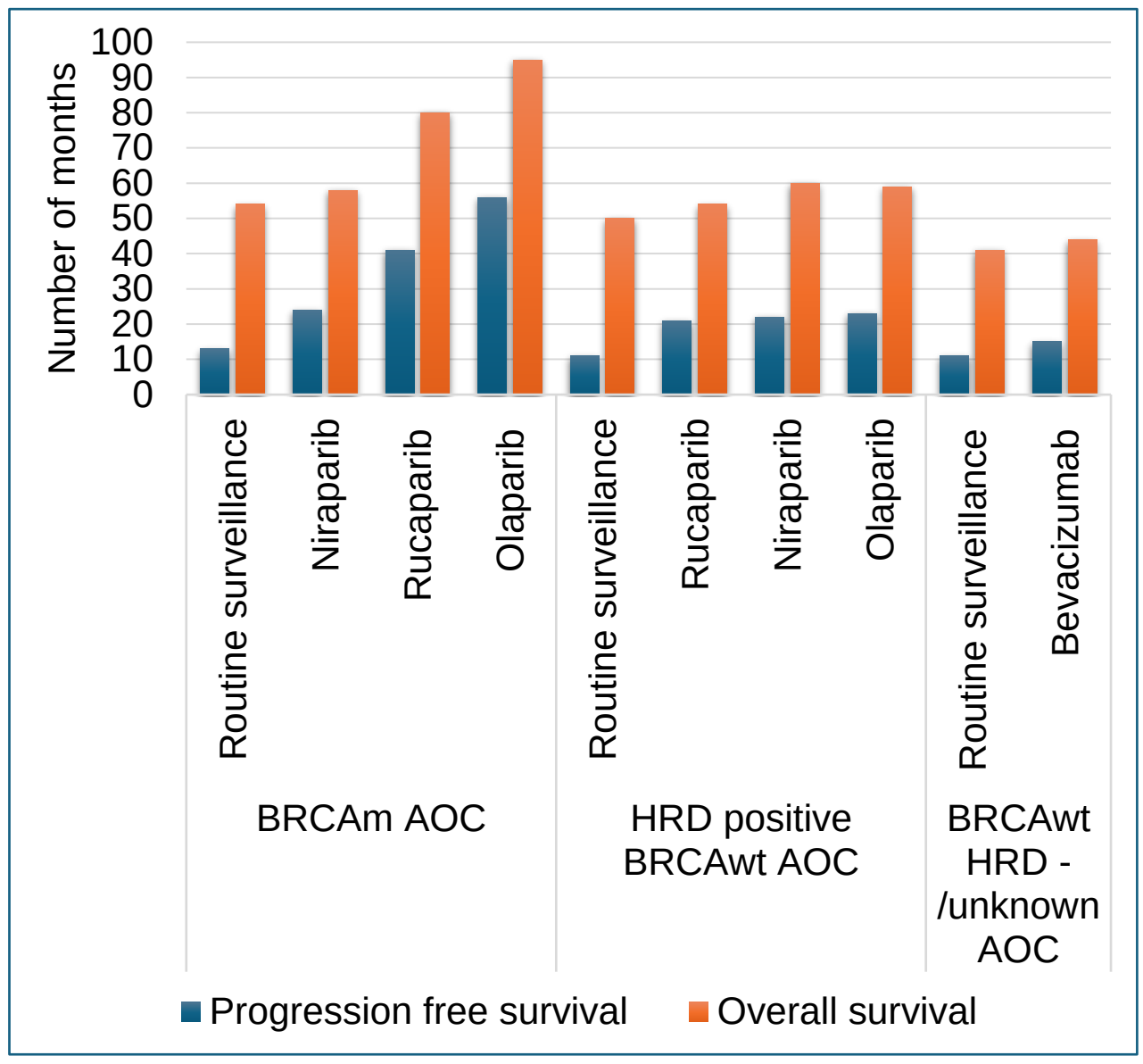
Rucaparib requires a 73% price cut for BRCAm AOC and 91% for HRD-positive BRCAwt tumors to become a cost-effective option.

LIFETIME QUALITY ADJUSTED LIFE YEARS AND COSTS ASSOCIATED WITH MAINTAINENCE THERAPY OPTIONS

Population sub-group	Comparative strategies	Discounted QALY per person	Discounted cost per person (₹)
BRCAwt HRD unknown/ negative AOC	Routine surveillance	2.59	6,00,865
	Bevacizumab	2.65	9,85,611
BRCAm AOC	Routine surveillance	2.79	5,47,723
	Olaparib	5.34	7,57,993
	Rucaparib	4.65	18,38,294
	Niraparib	3.43	1,02,53,444
HRD positive BRCAwt AOC	Routine surveillance	2.85	5,81,692
	Olaparib	3.54	7,63,033
	Rucaparib	3.31	16,07,719
	Niraparib	3.7	95,45,702

- Olaparib led to the highest lifetime QALYs of 5.34 and 3.54 in BRCAm AOC, and HRD positive BRCAwt AOC, respectively.
- Bevacizumab resulted in gain of 0.14 QALYs per person in a lifetime in BRCAwt HRD negative/ unknown AOC, relative to routine surveillance.

NUMBER OF MONTHS OF PROGRESSION FREE SURVIVAL AND OVERALL SURVIVAL



- Olaparib led to the highest progression-free survival of 56 months and overall survival of 95 months in BRCAm AOC.
- Bevacizumab resulted in gain of 4 months in progression-free survival, relative to routine surveillance in BRCAwt HRD negative/ unknown AOC.

CONCLUSION

Olaparib is a Cost-Effective first-line maintenance therapy for **advanced ovarian cancer associated with BRCA mutation.**

For **HRD-positive BRCAwt AOC** patients, **Olaparib** becomes economical treatment—but only after **a 23% reduction in its current price.**

While **Bevacizumab** leads to marginal survival benefits**, it is not a cost-effective** first line maintenance therapy option in BRCAwt HRD negative/unknown AOC.

- **Cost effectiveness: Incremental cost-effectiveness ratio (ICER) Olaparib:** Incremental cost per QALY gained with treatment with Olaparib for **BRCAm advanced** ovarian cancer patient **HRD positive BRCA negative subgroup** was found to be **Rs 82,711** (0.35 times GDP per capita)
- **Cost effectiveness: Incremental cost-effectiveness ratio (ICER) Bevacizumab: ICER/ QALY** gained for **Chemotherapy with Bevacizumab followed by Bevacizumab** was found to be **Rs 40,00,279** (17.25 times GDP per capita).
- At the cost-effectiveness cut-off of 1 GDP (INR 2,31,784) for procurement in public health programmes, the proposed intervention (**Olaparib**) is cost-effective.
- At the cost-effectiveness cut-off of 1 GDP (INR 2,31,784) for procurement in public health programmes, the proposed intervention (**Bevacizumab**) is not cost-effective.