PCN349 Value of Information Analysis Guiding the Reimbursement Decision of Olaparib for Metastatic Breast Cancer

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Objectives: Olaparib can improve progression-free survival compared with chemotherapy in patients with a BRCA mutation and HER2-negative metastatic breast cancer (MBC); however, this drug comes at a high price (AU$6,900/pack). This study aims to evaluate the cost-effectiveness of olaparib in this population, and to use value of information (VOI) analysis to inform a potential risk-sharing agreement.

Methods: A cost-effectiveness analysis was conducted using a cohort Markov model from an Australian health-payer perspective. Olaparib effectiveness was based on the OlympiAD trial, other parameters were systematically identified from the literature to populate the model. VOI measures were estimated using nonparametric regression and scaled up to the population expected to benefit from the drug over time. VOI measures included the expected value of perfect information (EVPI), the expected value of perfect parameter information (EVPPI), and the expected value of sample information (EVSI) if EVPPI appeared to exceed the cost of additional research. Population-VOI estimates were compared to research costs to inform if existing evidence is sufficient to make a reimbursement decision.

Results: Compared with chemotherapy, olaparib resulted in 0.26 QALYs gained at an additional cost of around A$72,000 (incremental cost-effectiveness ratio = AU$277,000/QALY). At its listed price and a willingness-to-pay threshold of AU$100,000, olaparib had zero probability of being cost-effective and an EVPI of AU$0, indicating that olaparib should be rejected. Nevertheless, reducing the price by over 50% would make olaparib potentially cost-effective with an EVPI of AU$650/patient and an EVPPI/patient being the highest (AU$450) for the hazard ratio for disease progression. Nevertheless, the population-EVPPI over the coming five years was only AU$90,000 for this orphan drug (5-year discounted population = 200) suggesting that additional research to reduce decision uncertainty is not worthwhile.

Conclusions: A significant price reduction under a special pricing arrangement would make olaparib in MBC potentially reimbursable based on existing evidence.