CoLab Network

Summary Report for Clinicians

Niraparib in Ovarian Cancer

Report Authors

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Knowledge Translation Support

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Executive Summary

Clinical trials have shown that niraparib can cause hematological toxicity. However, event rates in clinical trials may differ from those in the real world. This study aims to determine if the safety profile of niraparib in real-world patient populations differs from the clinical trial findings, using data from 4 provinces: Ontario, British Columbia, Alberta, and Quebec. The study found that the occurrence of adverse events was lower in the real-world setting than what is reported in clinical trials. The findings suggest that the real-world administration of niraparib is at lower doses than those recommended in the product monograph. Clinicians taking a cautious dosing approach and proactively monitoring for and managing adverse events could have contributed to the lower proportion of hematological toxicities observed in the real world. More research is needed to further guide clinical decisions.

Background

Niraparib (a poly-(adenosine diphosphate [ADP]-ribose) polymerase [PARP] inhibitor) is used as a maintenance therapy for patients with new or recurrent epithelial ovarian cancer whose disease has a complete or partial response to platinum-based chemotherapy. Clinical trials have shown that PARP inhibitors can cause hematological toxicity, most commonly thrombocytopenia, anemia, neutropenia, fatigue, and hypertension. Most patients in these trials required a dose interruption or reduction to manage these adverse events.

Policy Issue

Niraparib is reimbursed as a maintenance treatment for newly diagnosed and recurrent ovarian, fallopian tube, or primary peritoneal cancer. Given the toxicity rates seen in clinical trials, policy-makers want to further understand the risk profile of niraparib in managing ovarian cancer in real-world scenarios. This information can help inform patient monitoring and toxicity management measures.

Objective

The objective of the observational study was to describe the clinical and demographic characteristics of patients receiving niraparib treatment in real-world settings and the proportion of this patient population that experienced adverse events.

Policy Question

How does the safety and tolerability of niraparib in the real world compare with observations from the seminal clinical trials?

Results

Population

The study included **514 patients** undergoing maintenance treatment for newly diagnosed or recurrent ovarian cancer, with 483 using publicly funded niraparib (338 in Ontario, 45 in Alberta, and 100 in British Columbia) and 31 identified in the Personalize My Treatment Registry (31 in Quebec).

The overall characteristics of the included patient population were:

- Two-thirds of the patients were aged 65 years or older.
- More than half of the patients were diagnosed with ovarian cancer between 2020 and 2022.
- The ovaries were the most common primary tumour location.
- The most common tumour histology was serous.
- Most patients started niraparib treatment in 2022 after completing platinum-based chemotherapy.
- The most common initial daily dose of niraparib was 200 mg per day, followed by 100 mg per day, and 300 mg per day (the standard recommended dose is 300 mg per day).

Hematological Adverse Events

The following proportions of patients experienced hematological adverse events of **any grade** across all provinces:

- Anemia: 76.8%
- Thrombocytopenia: 41.5%
- Neutropenia: 39.3%

Across all provinces, **grade 3 or 4** hematological adverse events occurred in approximately 10% to 12% of the overall patient population:

- Anemia: 12.2% (Seminal clinical trials: PRIMA trial = 31.0%; NOVA trial = 25.3%; NORA trial = 14.7%)
- Thrombocytopenia: 11.7% (Seminal clinical trials: PRIMA trial = 28.7%; NOVA trial = 33.8%; NORA trial = 11.3%)
- Neutropenia: 10.8% (Seminal clinical trials: PRIMA trial = 12.8%; NOVA trial = 19.6%; NORA trial = 20.3%)

Approximately 20% of the patient population were newly diagnosed with hypertension and very few (< 10 patients) experienced febrile neutropenia.

Key takeaway: The occurrence of severe adverse events was lower in the real-world setting in all participating Canadian jurisdictions than what is reported in the clinical trials.

Limitations

There are 3 key limitations to this study. First, the results may have limited generalizability to the broader population in Canada; however, this may be minor given that the trends are relatively consistent across the provinces included in this study. Second, the observation window for the study was limited for some patients because niraparib was only recently publicly funded in Canada, which may undercount the number of hematological adverse events. Third, patient weight data are lacking, making it difficult to determine if those who started with 200 mg of niraparib received a personalized dose based on weight. Additionally, it is unclear if some patients who started on lower doses were subsequently titrated upward during their treatment.

Implications for Policy-Making

The reason for the lower proportion of hematological toxicities observed in the real world is not clear, but researchers believe it might be due to clinical experience, such as:

- clinicians taking a cautious dosing approach, starting their patients at a lower dose than recommended, and
- clinicians proactively monitoring their patients via regular blood work and managing adverse events.

The current analysis shows that niraparib is used carefully and at low initial doses in 4 provinces across Canada. Patients receiving niraparib maintenance treatment are not free of adverse events, but proactive management by clinicians may be preventing them from progressing to grade 3 or 4.

More research is needed to further guide clinical decisions on the use of niraparib maintenance treatment.

For more information on CoLab and its work visit the **CoLab website**.

Canada's Drug and Health Technology Agency

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About CADTH: CADTH is a not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs and medical devices in our health care system.

About CoLab: CoLab is a pan-Canadian network of experts in applied research, scientific methods, and data analysis. CoLab members work with CADTH's Post-Market Drug Evaluation Program to produce credible and timely evidence on post-market drug safety and effectiveness.