Nature Reviews Clinical Oncology | Published online 20 Jun 2017; doi:10.1038/nrclinonc.2017.93

BREAST CANCER

Olaparib improves PFS

A synthetic lethal interaction exists between mutations affecting *BRCA1* or *BRCA2* and the inhibition of some enzymes from the poly [ADP-ribose] polymerase (PARP) family. Notably, 5% of patients with breast cancer harbour germ-line mutations in *BRCA1/2*. The recently published results of a study led by Mark Robson show that patients with metastatic HER2-negative breast cancer and a germ-line *BRCA* mutation can benefit from treatment with the PARP inhibitor olaparib.

Patients participating in this phase III trial were randomly assigned to receive olaparib (n = 205) or standard-of-care therapy (n = 97). At the time of analysis (median follow-up duration of 14.5 months and 14.1 months for olaparib and standard therapy, respectively), olaparib was superior to standard therapy, with a longer median progression-free survival (PFS) duration (7 months versus 4.2 months, P <0.001) and a higher response rate (59.9% versus 28.8%). The rates of grade ≥3 adverse events were 36.6% and 50.5% for olaparib and standard therapy, respectively. Robson elaborates on these findings "this is the first study showing the advantage of a PARP inhibitor over standard therapy in a subset of patients with metastatic breast cancer". Some limitations of this study are that three different agents were used to treat patients in the control group, and that the patient population was heterogeneous in several aspects, such as hormone-receptor status or previous treatment history.

Further trials will help determine which patient subgroups are most likely to benefit from treatment with olaparib. The current results constitute, in Robson's words, "an important demonstration of the potential of scientifically developed targeted therapies, and an exciting new option for patients with breast cancer".

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ORIGINAL ARTICLE Robson, M. *et al.* Olaparib for metastatic breast cancer in patients with a germline BRCA mutation. *N. Engl. J. Med.* http://dx.doi.org/10.1056/NEJMoa1706450 (2017)