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BIO 194

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Writing assignment #3

Olaparib for Metastatic Breast Cancer in Patients with a Germline *BRCA* Mutation

The article referenced in this summary explores and tests whether Olaparib, a poly polymerase inhibitor can be used to prompt the deceleration of disease progression in patients with metastatic breast cancer due to germline BRCA gene mutations. BRCA genes 1 and 2, also known as Breast Cancer genes 1 and 2 are genes responsible for the production of proteins that repair damaged DNA. They are considered tumor suppressor genes because they regulate cell division to ensure normal replication, thus preventing cancer. Like with most genes, BRCA 1 and 2 can mutate into different variants, which disrupts their normal function. When a harmful variant of BRCA is passed down to offspring by either of the parents, the offspring’s chance of developing cancer increases.

Metastatic cancer is categorized as a type of breast cancer that spreads to an area further from the one where it started. It is also known as stage 4 cancer, which is the highest stage of a cancer diagnosis. This stage is reached through a process known as metastasis, where portions of the tumor break away from the original location and travel to other parts of the body.

Olaparib is a medication that is also known as Lynparza and is widely used for the treatment of BRCA gene-related cancers. It is thought to be a PARP inhibitor that blocks proteins that repair damaged DNA. In this case, it is used for cancer treatment because it stops the repairs of cancer cell’s DNA, leading to cell death. For this specific study, researchers focused on assessing Olaparib’s effectiveness on progression-free survival compared to standard treatments, such as chemotherapy.

In order to explore this, a randomized 3-phase study was conducted to compare Olaparib’s effectiveness by comparing it to standard therapy. The patients chosen had a germline BRCA mutation and showed no history of more than 2 chemotherapy regimens for metastatic disease. They were randomly assigned to a group using a 2:1 ratio. One group would receive 300mg Olaparib tablets twice a day, while the other group received standard chemotherapy with the physician’s choice of drug. At the end of the randomization, 205 patients received the Olaparib drug, and 97 received standard therapy. Every 6 weeks until week 24, magnetic resonance was done and progression was assessed every week after the first event

Although there was no significant survival observed due to the Olaparib treatment, it was found that the median survival rate with no disease progression was slightly longer and the chance of progression was 42% lower than standard therapy. The trial had some limitations, including the different types of alternative treatments used for the control groups thus not specifying differences in effect compared to a certain treatment. Overall, the study included crucial exploration and hypothesis generation of the potential of Olaparib for the treatment of BRCA mutation-related cancers.

Works Cited

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