Olaparib is a new drug created by Astrazeneca. Astrazeneca is a big pharmaceutical company known for its many commercial drugs. Olaparib is a PARP (Polyadenosine diphosphate ribose polymerase) and anti-cancer drug that is intended for patients that have mutations in the BRCA-1 and BRCA-2 genes.

The BRCA-1 and BRCA-2 genes are a class of genes that are known as tumor suppressors. They monitor the cells making sure that each cell is healthy before they split and create more cells. Basically they help keep cell growth stable, and make sure that no mutated cells are grown. When these genes are mutated, it allows for unhealthy cells to replicate, making it possible for cancers to form and create tumors. To get tested for these mutated genes, a blood sample must be taken and the results would be available in several weeks. Doctors recommend that a person getting tested get a counselor for the before and after of being tested. The reason is that this test can affect a person’s life significantly. Many women, who test positive for this mutation, end up removing their breasts to get rid of the cancerous tissues because they have an 80% chance of getting breast cancer in their lifetime. This mutation is also very common in the Ashkenazi Jewish descent. To get tested for this mutation costs between several hundred and several thousand dollars. It is recommended that a person check whether their health insurance covers genetic testing.

The BRCA mutation causes a weakness in the cancerous cells that healthy cells do not have. Olaparib attacks this weakness by inhibiting an enzyme involved in other DNA proofreading pathways. Because healthy cells do not have this weakness they are not affected by the drug and only the cancerous cells are attacked. This drug has been quoted as being “like taking Tylenol twice a day” just to show how easy it is to take.

There has been one phase trial that was conducted at the Institute of Cancer Research in London on June 2009. The trial contained 60 patients, 21 of which had either breast, ovarian or prostate cancer. (These types of cancers are hereditary and tend to be because of the BRCA mutation that is passed down.) All of which have the BRCA 1 or 2 mutations. The purpose of this trial was to test the side effects of the drug, more than it was as an aggressive treatment for the cancer. The drug was administered at increasing doses over several weeks, making sure along the way that there were no serious side effects. Of the 21 patients that had the mutation, 2 were not available for evaluation. Of the 19 patients that were left, 12 showed significant stabilizations and/or shrinkage in their tumors. Many experienced extended periods of remission, and they were free of cancer symptoms or major side-effects. The 39 remaining patients that did not have the mutation of the BRCA gene, showed no improvements.

The side effects of the drug included: fatigue, nausea, loss of appetite, somnolence (moodiness), and thrombocytopenia which is having few platelets in the blood. However, considering all of these side effects, they were all pretty mild compared to chemotherapy.

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