

Ipilimumab, Yervoy

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Abstract—Dr. James Allison of the Memorial Sloan-Kettering Cancer Center in NYC has recently developed Ipilimumab (Yervoy), which is a prescription medicine used to treat patients with metastatic melanoma. Yervoy is the first treatment for metastatic melanoma that has been proven to prolong the life expectancy of its recipients.

I. INTRODUCTION

Ipilimumab (Yervoy) is a prescription medicine that is used to treat patients who have melanoma (skin cancer) that has spread throughout the body so that it cannot be removed by means of surgery (metastatic melanoma). Yervoy was developed by Dr. James Allison, who is the head of the immunology department at The Memorial Sloan-Kettering Cancer Center in New York City. Yervoy was approved for commercial use by the Food and Drug Administration (FDA) on March 25th, 2011.

Yervoy is a remarkable and revolutionary drug, because it is the first treatment for metastatic melanoma that has actually been proven to extend life expectancy. For patients with metastatic melanoma, this is huge. "Ipilimumab may be able to give patients with advanced melanoma more time. Though much remains to be learned about the drug, it could well be 'the light at the end of melanoma's dark tunnel.'" (Dr. Vernon Sondak)

II. METHODS

Yervoy is a very unique drug. It does not directly kill the Melanoma. Instead, Yervoy collaborates with the patient's own immune system to kill the Melanoma cells.

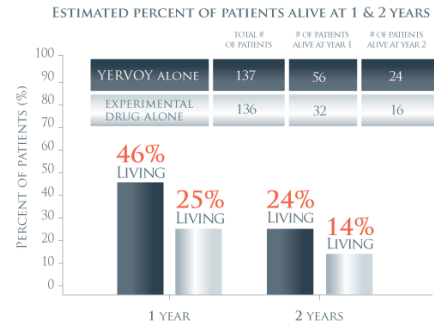
The body's immune system is composed of many "T-cells", which are cells that attack and kill any unwanted "intruder" cells in the body. When the immune system doesn't do its job as well as it should, not all the unwanted cells are killed, and thus, those cells begin to reproduce. The reproduction and spread of those unwanted cells, in short, is what causes metastatic melanoma.

Yervoy binds to a molecule, CTLA-4, on the surface of the T-cells. The role of CTLA-4 is to stop the T-cells from attacking unwanted intruder cells, in order to protect the body's own tissues. Yervoy works to remove this natural response from the CTLA-4 molecule, thus allowing the T-cells to attack the melanoma cells.

III. RESULTS

In clinical trials, Yervoy has proven to be a very effective drug. Over the time span of one year, patients who received Yervoy had a survival rate of 46% versus the 25% survival rate for patients who did not receive Yervoy. Similarly, after 2 years, patients who received Yervoy had a survival rate of

24% versus the 14% survival rate of patients who did not receive Yervoy.



IV. DISCUSSION

Yervoy is clearly an effective and revolutionary drug. For patients with metastatic melanoma, Yervoy is the first treatment that actually has been proven to extend life expectancy. It gives them more time, which for patients with advanced melanoma, is huge.

That being said, Yervoy also has many disadvantages. The first is that Yervoy has many serious side effects. The administration of the drug can lead to inflammation of the intestines (which can cause colitis), inflammation of the liver (which can cause liver failure), inflammation of the nerves (which can cause paralysis), inflammation of the glands, and severe skin reactions. Along with these serious side effects, Yervoy also has numerous minor side effects that can cause patients day to day discomfort.

Another disadvantage of Yervoy is that it is not approved for use in patients under the age of 18, and is also very costly to receive.

Moving forward, I think this drug has much room to be improved. Research is still being conducted to see if the serious side effects can be eliminated and to see what patients would benefit most from undergoing treatment with Yervoy. As researchers gain a greater understanding of how the drug works, I would like to see the negative side effects from the drug to be decreased and the effectiveness of the drug to be increased.

REFERENCES

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