On Sep. 4th, 2014, FDA granted accelerated approval to Pembrolizumab (Keytruda®) for the treatment of metastatic melanoma.

**How does it work?**

Pembrolizumab works as a monoclonal antibody that binds Program Cell Death 1 (PD-1) Receptor. The PD-1 receptor, when activated by binding to the PD-1 ligand, leads to an inhibition of T-cell proliferation and cytokine production. Certain tumor cells exhibit an upregulation of PD-1 ligand, contributing to an inhibition of active T-cell immune surveillance of malignant cells. Therefore, inhibition of PD-1 receptor would increase the immune response to tumor cells.

**What are the side effects?**

Pembrolizumab is associated with Immune related reactions—pneumonitis (3-4%), hypothyroidism (8%), colitis (1%), renal failure (0.5%), hypophysitis (0.5%), and hepatotoxicity (0.5%). Other adverse effects include: Nausea (30%), Rash and Pruritus (29%), Arthalgia and Myalgia (14-20%), and Anemia (14%).

**How should I administer Pembrolizumab?**

The recommend dose of Pembrolizumab is 2mg/kg administered as an infusion over 30 minutes every 3 weeks until disease progression or unacceptable toxicity. No pre-medications needed.

**When should I use this?**

Currently, it is recommended to use Pembrolizumab for patients with unresectable or metastatic melanoma with disease progression following ipilimumab treatment and, if appropriate, a BRAF inhibitor.

**Is there any other drug like this?**

There is currently one other PD-1 inhibitor in phase III clinical trials, Nivolumab. Preliminary results showed 32% response rate compared to 11% in investigator chosen chemotherapy (Dacarbazine/Carboplatin plus Paclitaxel).

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**Monitoring Parameters**

- CBC
- Liver Function Test
- Renal Function and electrolytes
- TSH levels

**When do I dose reduce?**

Dose reduction is not necessary for renal dysfunction or mild hepatic impairment. Pembrolizumab has not been studied in moderate or severe...