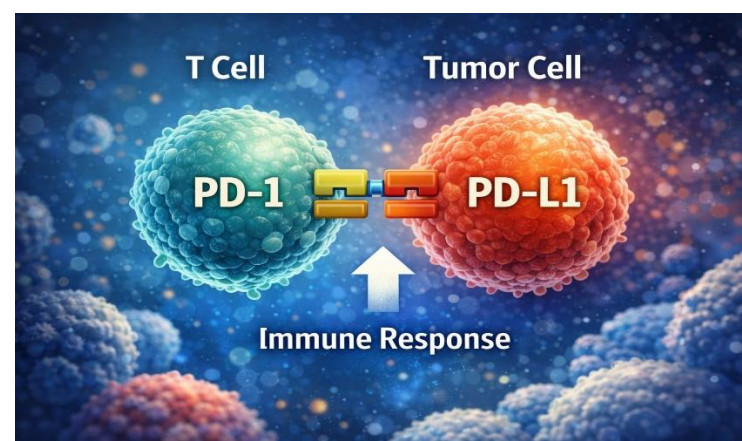


The Bulletin from the Clinical Pharmacist

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Pembrolizumab

Therapeutic class: Antineoplastic agent

Pharmacologic class: Immune Checkpoint Inhibitor (PD-1 Inhibitor)

Mechanism of Action:

Pembrolizumab is a humanized monoclonal antibody that binds to the programmed death-1 (PD-1) receptor on T-cells. By blocking the interaction between PD-1 and its ligands (PD-L1 and PD-L2), pembrolizumab enhances the immune system's ability to recognize and destroy cancer cells. This results in an increased anti-tumour immune response.

Formulations:

Injection (Keytruda): 100 mg/4 mL single-dose vial

Route of administration: Intravenous infusion

Indications:

S.NO	Labelled Indications	Dosing & frequency
1.	Gastric cancer	200 mg once every 3 weeks until disease progression, unacceptable toxicity, or (in patients without disease progression) for up to 24 months.
2.	Head and neck squamous cell cancer	
3.	Hodgkin's Lymphoma, classical	
4.	Melanoma	
5.	Microsatellite instability-high cancer	
6.	Non-small cell lung cancer (metastatic)	
7.	Urothelial carcinoma	
8	Non-small cell lung cancer (metastatic, non-squamous)	200 mg once every 3 weeks (in combination with pemetrexed and carboplatin) for 4 cycles, followed by pembrolizumab monotherapy of 200 mg once every 3 weeks

Administration:

IV: Infuse over 30 minutes through a 0.2 to 5 micron sterile, non-pyrogenic, low-protein binding inline or add-on filter. Do not infuse other medications through the same infusion line.

Non-small cell lung cancer (metastatic): When administered in combination with chemotherapy (pemetrexed and carboplatin), pembrolizumab should be administered prior to chemotherapy if scheduled to be administered on the same day.

Dose Adjustment:

Hepatotoxicity: Stop temporarily if AST/ALT $>3-5\times$ Upper Limit of Normal (ULN) or Bilirubin $>1.5-3\times$ ULN and give steroids; restart after recovery, but stop permanently if AST/ALT $>5\times$ ULN, bilirubin $>3\times$ ULN, or if baseline liver enzymes increase $\geq 50\%$ and persist for 1 week.

Global efficacy:

Globally, pembrolizumab helps about 40% of cancer patients who show good response, and improves long-term survival, with around 20–30% of patients living for 5 years or more with some major cancers.

Side effects:

Pembrolizumab causes immune-related side effects such as thyroid problems, colitis, hepatitis and pneumonitis due to immune overactivation.