



ABSTRACT

Cancer, a disease where uncontrollable cells grow and invasion to other parts of the body is observed. Cancer a leading cause of death worldwide, accounting for nearly 10 million deaths in 2020 and nearly one among six deaths in the world. In 2020, the most common cancer cancers are breast cancer (2.26million cases), colorectal cancer (1.93million cases) , prostate cancer(1.41million) and lung cancers(2.21million cases). More than 200 types of cancers were classified according to their site of origin .

Chemotherapy widely used for cancer treatment widely employs Durvalumab, Atezolizumab, Nivolumab, Pembrolizumab, and Avelumab with adverse effects.

DOSTARLIMAB, a FDA approved drug widely prescribed for endometrial cancers that acts in accordance with other programmed death ligand-1or programmed death-1 (PD-L1/PD-1) It is a humanized monoclonal antibody that binds with high affinity to PD-1,resulting in inhibition of binding to PD-L1 and Programmed death ligand-2(PD-L2). It is used as an immunotherapy drug for treating cancer.

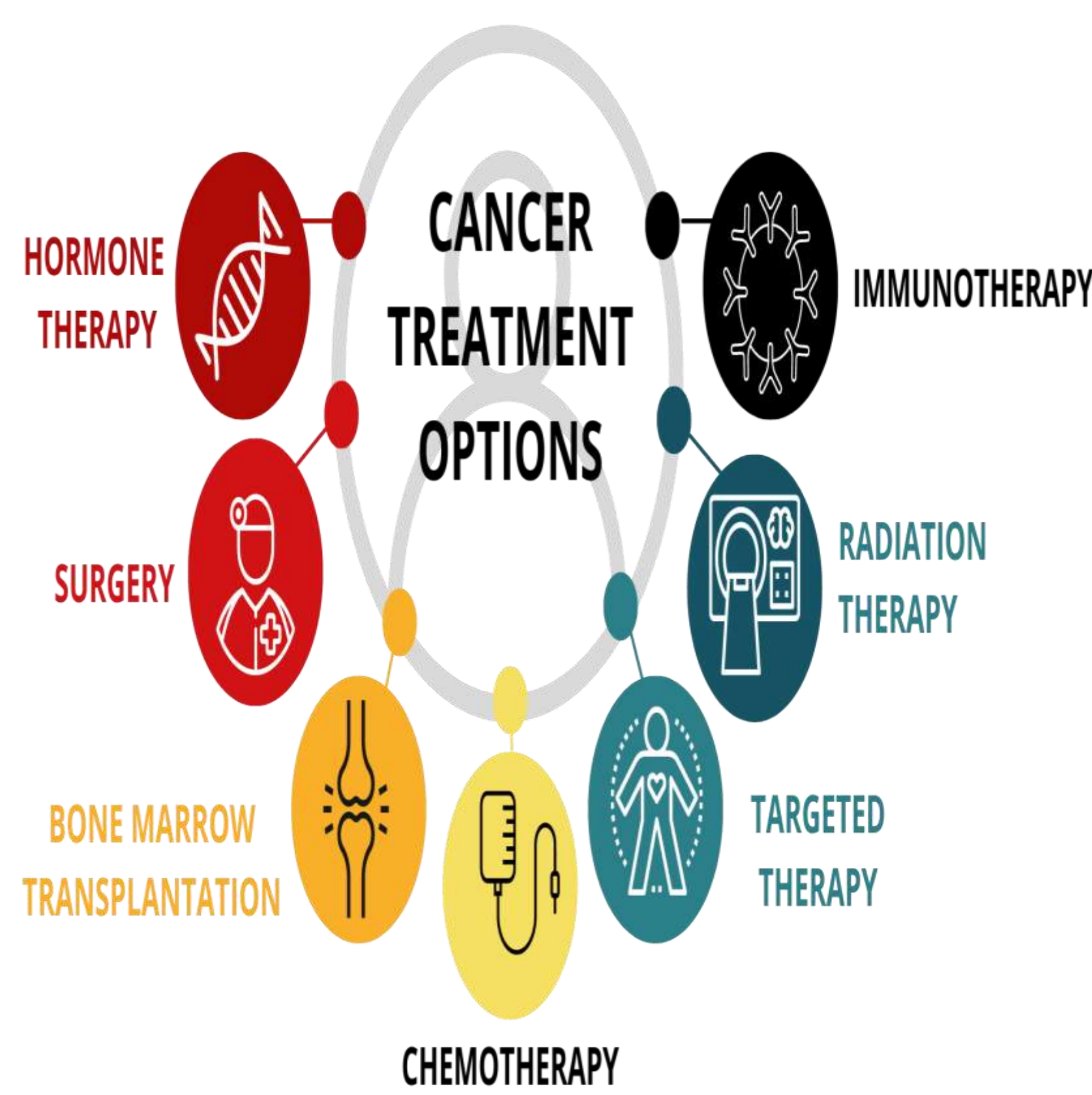
A monoclonal antibody is a type of protein that is particularly produced in a laboratory to serve as substitute antibodies that can imitate the immune system. Strikes on the cells that are unwanted such as cancer cells. Dostarlimab cures 100% of the colorectal cancer (CRC) patients who are given this drug with minimal adverse events of grade 3 or higher in any patient.

INTRODUCTION

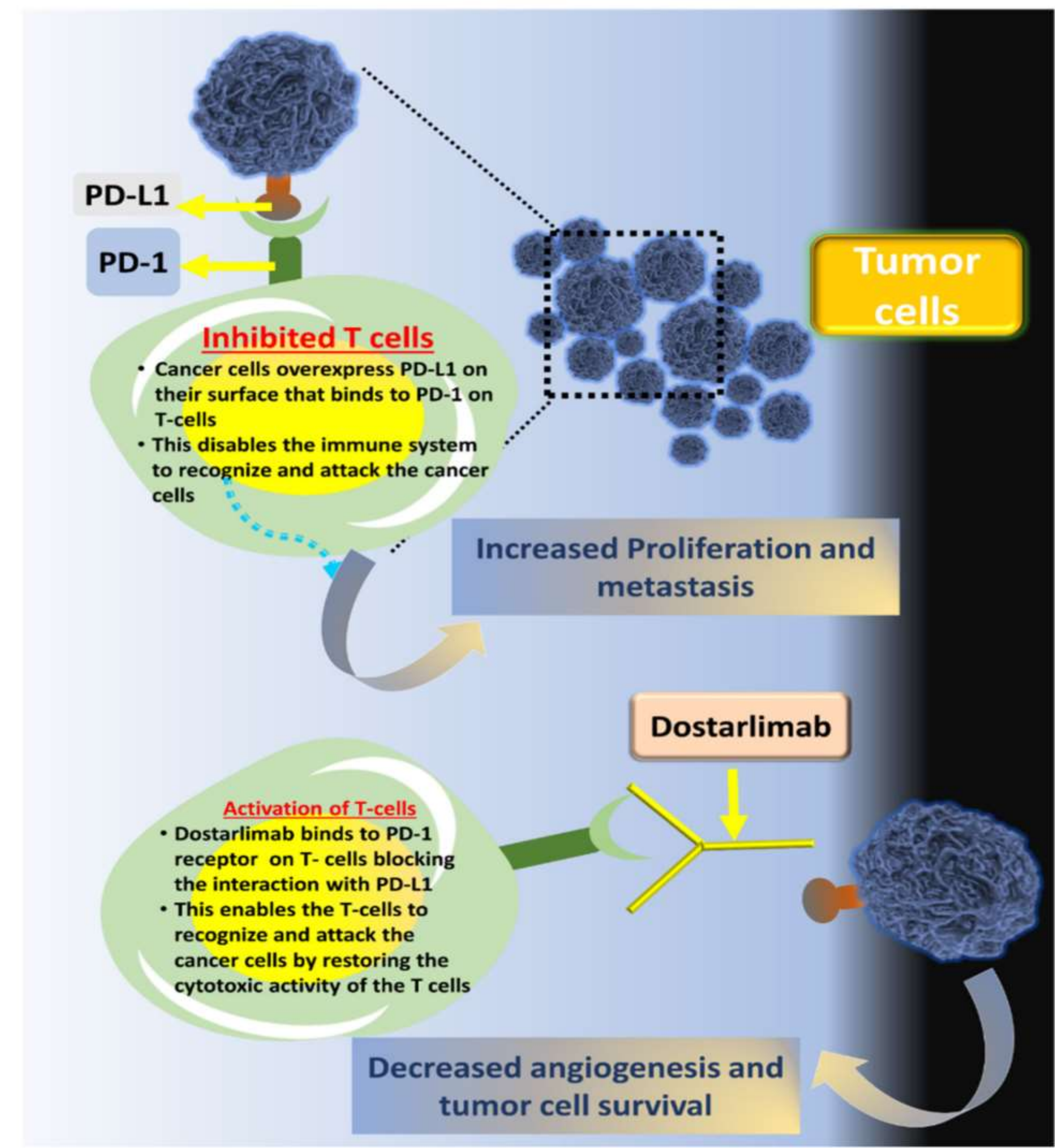
Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body.

Cancer can start almost anywhere in the human body, which is made up of trillions of cells. Normally, human cells grow and multiply (through a process called cell division) to form new cells as the body needs them. When cells grow old or become damaged, they die, and new cells take their place.

TREATMENTS



Mechanism of action



IMMUNOTHERAPY

One of the remarkable change in the immunotherapy of cancer

DOSTARLIMAB

Dostarlimab is an IgG4 humanized monoclonal antibody targeted against the human programmed death receptor-1 (PD-1). PD-1 receptors are found on T-cells and, when activated, serve to inhibit immune responses - some cancers leverage this system by overexpressing PD-1 ligands, thereby effectively inhibiting the anti-tumors immune response that would typically attempt to destroy the cancerous cells. Agents acting on the PD-1 pathway, such as nivolumab and pembrolizumab, facilitate endogenous immune-mediated anti-tumor's activity and may therefore be used to treat a wide variety of cancers, including those of the skin, lung, kidneys, and liver.

BENEFITS OF DOSTARLIMAB

When compared to the drugs for CCR therapy (Durvalumab, Atezolizumab, Nivolumab, Pembrolizumab, and Avelumab) and has been associated with high occurrence of grade 3-4 adverse side effects.

The findings showed that treatment with dostarlimab (TSR-042) led to an overall response rate (ORR) of 29.6% in the general patient population. In the subgroup of patients with MSI-H tumors, the ORR was even higher at 48.8%; in those whose tumors were MSS, it was 20.3%.28-May-2019

SIDE EFFECTS

Dostarlimab may cause side effects. Tell your doctor if any of these symptoms are severe or do not go away:

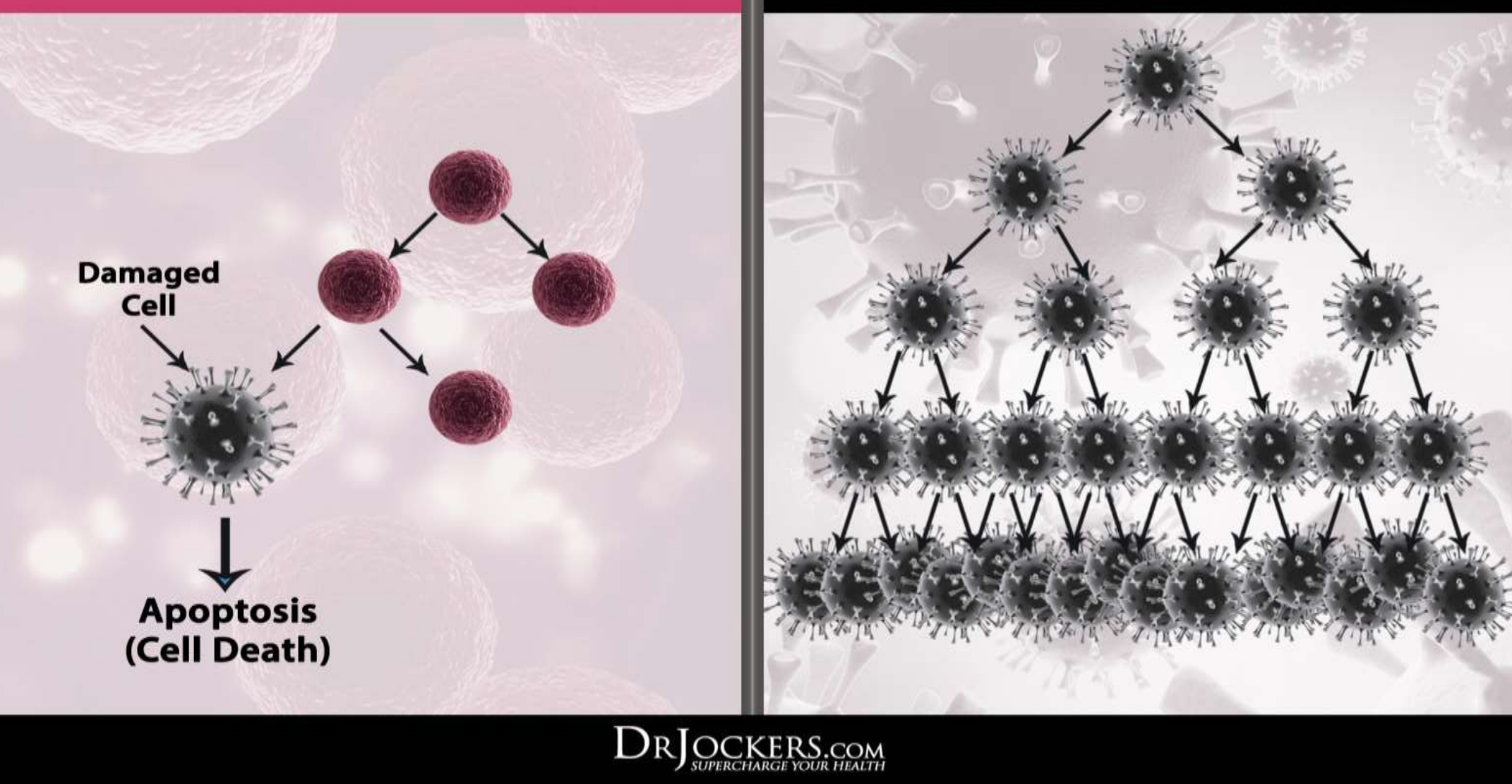
- .Nausea
- .Constipation
- .Fatigue
- .Muscle or joint pains
- .Other side effects likecough, chest pain, or shortness of breath
- diarrhoea; increase in number of bowel movements; black, tarry, sticky stools, or stools that have blood or mucus in them; or stomach-area pain or tenderness
- yellowing of skin or eyes, dark-coloured urine, bleeding or bruising more easily than normal, loss of appetite, severe nausea or vomiting, decreased energy, or pain on right side of stomach area
- headaches, including those that are unusual or will not go away
- changes in mood or behaviour (decreased sex drive, irritability, or forgetfulness)
- deepening of voice or hoarseness
- changes in weight (gain or loss)

REFERENCES

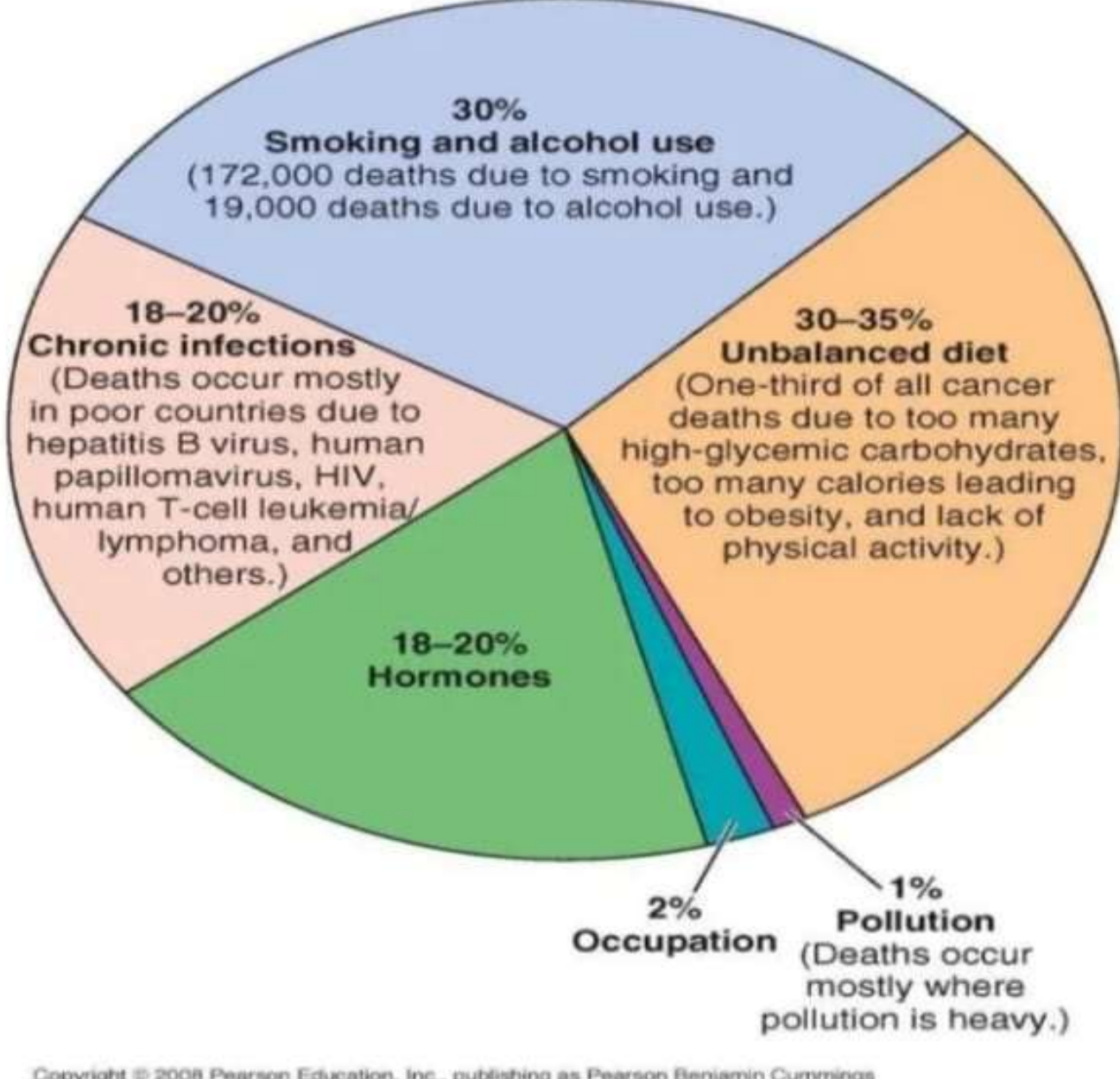
<https://www.cancer.gov/about-nci>
<https://www.fda.gov/drugs/resources-information-approved-drugs/fda-grants-accelerated-approval-dostarlimab-gxly-dmmr-advanced-solid-tumors>

Normal Cell Division

Cancer Cell Division



Factors Believed to Contribute to Global Causes of Cancer



EPIDEMIOLOGY OF CANCER

Cancer Cases In India
Estimated To Be
13.9 Lakh In 2020
May Rise To
15.7 Lakh By 2025



For the first time in history, Dostarlimab, a monoclonal antibody drug, has been termed as a 'potential' cure for cancer.

A clinical trial conducted by the US-based Memorial Sloan Kettering Cancer Center in 2022 discovered that all 18 rectal cancer patients found that their cancer had disappeared within six months after receiving an experimental treatment of this promising breakthrough medication. Participants of the trial were given at least nine doses of the drug every three weeks for six months.

After the completion of the duration, all patients showed a clinical complete response with no signs of the tumors. The treatment was followed by chemotherapy, radiation sessions, endoscopy, biopsy, and invasive surgery.

PHARMACODYNAMICS

Dostarlimab is an immunotherapy that facilitates the body's endogenous anti-tumour immune response in the treatment cancer. It is administered over a span of 30 minutes via intravenous infusion every three to six weeks depending on the cycle.

Agents that interfere with the PD-1/PD-L1 pathway, including dostarlimab, remove an important immune system inhibitory response and may therefore induce immune-mediated adverse reactions which can be severe or fatal. These reactions can occur in any organ system and can occur at any time after starting therapy, and while they most often manifest during therapy they may also appear after discontinuing the causative agent. Patients receiving therapy with dostarlimab should be monitored closely for evidence of an underlying immune-mediated reaction and evaluated and treated promptly if an immune-mediated reaction is suspected

TYPES OF CANCER

- lung cancer
- Breast cancer
- Colon and rectal cancer
- Endometrial cancer
- Pancreatic cancer
- Kidney cancer
- Prostrate cancer
- Thyroid cancer
- leukemia

