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**SUBJECT WBC AND PLATELET DISORDER**

**SUBMIITED TO MAM SAIMAHADI**

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**DEFINITION**

Myeloma is a cancer of plasma cells that start in the bone marrow. A single mass of myeloma cells is called a solitary plasmacytoma, which is mostly found in the bones but also be found in soft tissue. Multiple plasmacytomas are referred to as multiple myeloma.

In bone marrow, blood stem cells produce three elements: red cells , platelets and white cells . These cells are suspended in plasma, the liquid portion of the blood, contains vitamins, minerals, proteins, hormones, antibodies and chemicals. In response to bacteria, viruses enter to the body, white blood cells; produce antibodies that target specific bacteria and viruses for destruction. Multiple myeloma is a cancer characterized by plasma cells that multiply rapidly and don’t shut off reproduction when they should. Instead of producing antibodies that help fight infection, myeloma cells develop essentially useless antibodies called “M” protein.

**TYPES**

There are two main types of multiple myeloma. They’re categorized by their effect on the body:

1. An indolent myeloma causes no noticeable symptoms. It develops slowly and doesn’t cause bone tumors. just small increases in M protein and M plasma cells.
2. A solitary plasmacytoma causes a tumor to form in bone. It usually responds well to treatment, but required close monitoring.

**CAUSES**

The cause of multiple myeloma is unknown. No known risk factors for multiple myeloma, may be that genetic abnormalities, such as c-Myc genes, environmental exposures,etc

**SIGN AND SYMPTOMS**

* Hypercalemia
* Nerve damage
* Skin lesions
* Enlarged tongue and infection
* Anemia
* Bone pain
* Weakness
* Bone fractures
* Kidney damage

**OTHER SYMPTOMS**

* Fatigue
* Bone fracture
* susceptibility to infection
* Bleeding
* Nerve damage
* Skin lesions (rashes)
* Bone tenderness or pain, including back pain
* Weakness, fatigue or tiredness
* Infections
* Pathologic bone fractures
* Back pain
* Spinal cord compression
* Loss of appetite and weight loss
* Constipation

**TREATEMENT**

* Particular drug treatment gives on specific abnormalities within cancer cells that allow them to survive.
* Biological therapy drugs given to patient due to immune system fight with myeloma cells. ...
* Chemotherapy.
* Corticosteroids.
* Bone marrow transplant
* Radiation therapy.

**LABORTRY DIAGNOSIS**

* Blood test
* Urine tests.
* X-ray.
* Magnetic resonance imaging (MRI)

 An MRI uses magnetic fields, to identified detailed images of the body. It can show if normal bone marrow has been replaced by myeloma cells or by a plasmacytoma, especially in the skull, spine, and pelvis. it can also be used to measure the tumor’s size.

* Computed tomography (CT scan)

A CT scan creates a detailed view that shows any abnormalities or tumors in soft tissues.

* Bone marrow aspiration and biopsy.

 These 2 procedures are same and mostely done at the same time to examine the bone marrow. Bone marrow has both a solid and a liquid part. A bone marrow aspiration removes a sample of the fluid through a needle. Also removal of a small amount of solid tissue using a needle. This is important for making a diagnosis of myeloma.