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Myelodysplastic syndromes (MDS)

Myelodysplastic Syndromes (MDS) are a group of disorders in which the bone marrow fails to make enough healthy red blood cells (RBCs), white blood cells (WBCs) or platelets (PLTs). MDS is considered a type of blood cancer and occurs when newly formed blood cells become abnormal and do not grow (or mature) correctly.

After a patient is confirmed to have MDS, they are usually also assigned a risk score. The risk score is one important factor in predicting how the disease is likely to progress over time.

About lower risk MDS (LR-MDS)

Lower-risk MDS progresses slowly and may cause mild to moderate anemia (a low number of red blood cells) or reductions in other types of blood cells.

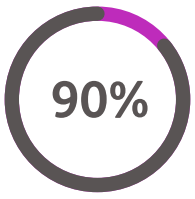
About higher risk MDS (HR-MDS)

Higher-risk MDS refers to the risk groups that carry the poorest outlook, as defined by scoring systems such as the International Prognostic Scoring System (IPSS) or the Revised International Prognostic Scoring System (IPSS-R). Survival for these patients has historically been shorter than for those with lower-risk disease.

Prognosis and survival

For the most severe forms of MDS median survival is:
~10 months

For lower-risk MDS median survival is:
~5 years



MDS patients develop anemia, or low red blood cell counts. Hemoglobin (Hgb) less than **10 g/dL** is a marker of severe anemia.

Risk factors

- Older age
- Prior cancer treatment
- Family history
- History of smoking
- Exposure to high dose radiation or workplace benzene

Signs and symptoms

Symptoms of MDS can include:

Low red blood cell (RBC) count, or **anemia** can cause fatigue, weakness, pallor or pale skin and shortness of breath.

Low neutrophil count (a type of white blood cell), called **neutropenia**, increases the risk of infection and fever and can be associated with oral ulcers.

Low platelets, or **thrombocytopenia** count can cause easy bruising, as well as bleeding from the nose and gums.

Impact of anemia

Chronic anemia and transfusion dependency are the main clinical challenges of MDS.

50% of patients with MDS require regular RBC transfusions within 2 years of diagnosis.

A hemoglobin of <10g/dL is a key threshold to assess symptoms and consider intervention.

Transfusion dependence and low hemoglobin levels (<10g/dL) negatively impact survival.

A routine blood test can determine the level of hemoglobin, a protein in red blood cells that carries oxygen throughout the body. Low hemoglobin indicates anemia.

Treating MDS-related anemia*

Erythroid maturation agents (EMA) are medicines that promote the maturation of developing red blood cells, which improves anemia.

Erythropoiesis-stimulating agents (ESA) are substances that stimulate the bone marrow to make more red blood cells.

In higher-risk MDS, the goal of treatment shifts from reducing transfusion needs to prolonging survival, with hypomethylating agents as first-line therapy and stem cell transplant the only potential cure.

* This is not a complete list of LR-MDS-related anemia treatment options. Talk to your healthcare team about available treatment options.

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