The Medical Minute: What is myelodysplastic syndrome?

June 15 2012, By Dr. David Claxton

Television journalist and host of "Good Morning America" Robin Roberts announced this week that she has myelodysplastic syndrome, or MDS, an uncommon blood and bone marrow disorder.

MDS is a cancer of the bone marrow involving the cells that make up our blood -- red blood cells, white blood cells, and platelets. It is typically a slow-growing type of cancer that affects older people, but it can occur in younger adults and even children.

Certain types of chemotherapy predispose people to MDS, including some common treatments for types of breast cancer, lung cancer, and some gastrointestinal malignancies. But many cases of MDS are also found in people who have not been exposed to chemotherapy, so we don't understand clearly what causes the process.

MDS used to be referred to as "pre-leukemia," a term doctors don't use much anymore because although many MDS cases will turn into leukemia, many will not. In some patients with a diagnosis of MDS, the disorder turns into leukemia within just a few months, whereas with others, the condition may remain stable over many years.

There also are a group of disorders that doctors refer to as myeloproliferative disorders, or myeloproliferative syndromes, which has some overlap with MDS. These are different in that the bone marrow process is more proliferative, seen as increased bone marrow cells in the blood and growth of the spleen. In MDS, however, the blood

cell counts are usually reduced and, in most cases, the spleen is normal in size.

Symptoms of MDS include weakness, or bleeding or bruising, but there are many other conditions that can also cause those same symptoms. MDS is usually diagnosed after a doctor requests blood work from a patient and blood cell counts -- red cell counts, white cell counts, or platelet counts -- are found to be abnormally low.

In most MDS patients the initial problem is low blood cell counts, specifically red cell counts. Many patients need transfusions over a number of years. Medications also can be effective for some MDS patients. There are two injectable chemotherapies that can sometimes produce complete remission of MDS and, in other cases, offer significant benefit over time. For a selective small group of MDS patients, an oral medication can be very effective. There also are a number of investigational research treatments as part of an active field of study to find a treatment and cure. Today, the only cure for MDS is bone marrow and stem cell transplantation from another individual; for younger patients with MDS this is a particularly good option.

For any given patient with MDS, doctors will examine various factors to determine prognosis. For example, if the changes in the bone marrow suggest a more proliferative or malignant state, that implies increased risk over time for develop of leukemia and death or complications. Chromosome studies are important for understanding risk in MDS, so the bone marrow is examined for changes in chromosomes. MDS patients who develop the disease after chemotherapy are generally at greater risk for problems over time.

In older individuals, MDS and its treatment may affect quality of life but not affect longevity because of other health problems that are more likely to pose a problem before the MDS would become more serious.

For younger individuals it is often a serious, life changing and often life-threatening problem.

The limited effective therapies for MDS therefore justify the research efforts underway. Our understanding of MDS is increasing, but better treatments are needed for this difficult problem.

Provided by Pennsylvania State University