

IN EVERY ISSUE

# New Blood

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*FDA decision changes the routine for treating cancer-related anemia.*

Anemia is one of the most common side effects of cancer treatment, with roughly 90 percent of chemotherapy patients developing anemia. Untreated anemia can impair quality of life and survival, with symptoms including fatigue, dizziness, inability to concentrate, shortness of breath, chest pain, and elevated heart rate. Severe anemia can delay chemo-therapy or require the dose to be lowered.

## Causes

Red blood cells (RBCs) are made in the bone marrow and carry oxygen to the body's tissues using hemoglobin molecules. Anemia results when the body has too few RBCs, and getting at the root of anemia is essential before treating it.

Although the causes of anemia can vary, cancer therapies are a primary culprit. Chemotherapy can damage healthy cells, including cells in the bone marrow that produce RBCs; radiation therapy can also damage bone marrow.

Sometimes the cancer itself causes anemia. Patients with leukemia, lymphoma, or myeloma have a higher risk of developing anemia because in addition to treatment-induced decreases in RBCs, these three types of cancer can grow in the bone marrow and suppress the production of RBCs.

Certain tumors, such as stomach and colon, may cause significant blood loss, resulting in iron deficiency. Other causes of anemia include nutritional deficiencies, tumor-related blood loss, major organ problems, sickle cell disease, or a combination of these factors.

## Management

The hormone erythropoietin, or EPO, is produced in the kidneys and tells the body when it needs to produce more RBCs. Genetically engineered EPO, which compensates for the shortage of natural EPO in the body, has been used widely since the 1990s for chemotherapy-induced anemia.

EPO drugs, such as Procrit (epoetin alfa) and Aranesp (darbepoetin alfa), were attractive alternatives to repeated blood transfusions in patients burdened with chemotherapy infusions. (Iron supplementation is usually recommended with EPO use.)

In the past few years, however, research revealed greater evidence of complications arising from the overuse of EPO drugs. Studies have shown that these drugs may lead to increased harm, particularly blood clots, and decreased survival in certain groups of cancer patients, including those with cancers of the head and neck, breast, lung, and cervix.

These drugs were given a “black box” warning, signifying serious side effects, in early 2007. And as of August 2008, the Food and Drug Administration placed stronger restrictions on EPO agents.

The FDA advises that they only be used to avoid transfusions or severe anemia instead of trying to raise red blood cell counts to a normal level. The agency does not recommend these drugs for anemic cancer patients who are not receiving chemotherapy, nor does it recommend them for patients receiving chemotherapy as curative treatment (such as adjuvant chemotherapy for early-stage cancers).

Since the FDA noted blood transfusions as the preferred method for correcting anemia, more patients have been receiving transfusions and fewer EPO drugs are being prescribed.

## Prevention

Nutrient-rich foods might help fight fatigue and other symptoms of anemia. Because dietary needs vary among patients, a registered dietitian can develop a customized plan.

In general, prevention can be as simple as eating a well-balanced diet that includes green leafy and cruciferous vegetables, fresh and dried fruits, iron-fortified cereals and breads, lean red meats, eggs, and dried beans.

Iron and folic acid supplements may minimize dietary deficiencies, but patients who are anemic should not take them without a physician’s approval.

Patients also should report any bleeding to their physician so it can be resolved before anemia develops. Routine blood tests can detect anemia in an earlier stage. The goal is to treat the underlying cause of anemia so that symptoms subside or go away.

—*Heather Lindsey contributed to this article.*