National University Cancer Institute, Singapore

Patient and Family Information

WHAT YOU NEED TO KNOW ABOUT ANAEMIA

A member of the NUHS

What is anaemia?

Anaemia is a condition that indicates there are insufficient red blood cells in the blood circulation to transport oxygen to the tissues in the body. Oxygen acts like a fuel, providing energy to the muscles and organs to function. When you have anaemia, your heart and lungs compensate by working harder to deliver an adequate amount of oxygen to the tissues. This will lead to several symptoms identified below.

Symptoms of anaemia

- Weakness, fatigue and lethargy
- Shortness of breath
- Headache, dizziness or fainting spells
- Chest pain or palpitations
- Pallor

What causes anaemia?

Although anaemia is a condition that indicates having insufficient red blood cells in the blood circulation, it is commonly a symptom of an underlying disease or condition. Possible conditions causing anaemia include:

- Blood loss from an injury or gastrointestinal tract
- Excessive bleeding from prolonged menstruation
- Inherited blood disorder such as thalassemia
- Chronic kidney disease and other chronic diseases
- Lack of nutrition that causes a lack of folic acid, vitamin B12 or iron in the diet
- Haemolytic anaemia which develops when red cells are destroyed faster than the bone marrow can replace them
- Bone marrow not producing enough red cells

Diagnosing anaemia

Anaemia is diagnosed when the haemoglobin (Hb) level is low. There are different types of anaemia. These include iron deficiency anaemia, Vitamin B12 or folate deficiency anaemia, as well as anaemia of chronic disease. If you are suspected to have any of these, your physician may use the following investigative tools to help diagnose the cause. With the right diagnosis in hand, you will receive the correct treatment aimed at the condition that causes your anaemia. These investigations include:

- Blood tests (such as Full blood count, Iron panel, vitamin B12/Folate level)
- Endoscopy to rule out gastrointestinal bleeding (gastroscopy and colonoscopy)
- Sometimes a bone marrow examination may be required

Treatments of anaemia

Most types of anaemia can be treated with a combination of medications and good nutrition. The type of medication will also depend on what's causing your anaemia. Your doctor will advise on the best treatment for your type of anaemia.

Medications

<u>Iron</u>

Iron is essential in building red blood cells. Iron supplements can be taken orally and is absorbed through the digestive tract. It can also be administered through the intravenous route whereby it will be infused into the veins. The intravenous route is used if oral iron is not tolerated, if oral iron is not effective and in situations when iron needs to be delivered rapidly for an impending surgery.

<u>Folic acid</u>

Folic acid is a vitamin that stimulates the production of blood cells.

Vitamin B12

Vitamin B12 can be found in food and is important for cell growth and production and other functions in the body.

Erythropoietin (EPO)

EPO is a hormone produced in the kidneys that stimulates the production of new red blood cells. EPO is available as an injection to boost patient's blood production. Situations where it is used are anaemia due to chronic kidney disease and treatment of anaemia prior to surgery. Because this medication uses the iron stores in your body, it is important to have adequate iron replacement for the best response.

Blood Transfusions

In the uncommon situation where anaemia is severe or no alternative medications are available, blood transfusions are given to treat anaemia. Transfused red cells last for only an average of 30 days in the body, therefore it is important to follow-up with medications to boost your body's own red cell production.

Nutrition

Food rich in iron can prevent iron deficiency anaemia. Patients are also encouraged to consume food containing vitamin C to improve iron absorption. Foods containing vitamin B12 and folic acid are also encouraged as it will assist in red blood cell formation and maturation to function properly.

Sources of iron

Beef, oysters, clams, tuna, mussels, sardines, mackerel, turkey, lamb, pork, salmon, chicken/beef liver, iron fortified cereals, beans, dried fruits, green leafy vegetables.

Sources of Vitamin C
Citrus fruits, tomatoes, spinach, broccoli.

Sources of Vitamin B12
All meats, liver and dairy products.

Sources of Folic acid
Livers, asparagus, green leafy vegetables, dried beans, whole wheat, oranges, broccoli and cabbage.

Anaemia Clinic Information

The anaemia clinic offers pre-surgical anaemia testing and management of the different types of anaemia. During the clinic, you will be asked questions about your health and further tests may be conducted. The condition causing your anaemia will be determined and treatment given for your anaemia

It is run by a haematologist, with support from an anaemia nurse. A haematologist is a physician who specialises in blood and bone marrow diseases.

Preparing for your appointment

- List any symptoms you're experiencing.
- Make a list of all medications, vitamins or supplements that you're taking to show your doctor.
- List questions to ask your doctor starting from the most important to the least important.

Some basic questions to ask your doctor include:

- What's the most likely cause of my symptoms?
- What kinds of investigations do I need?
- What caused my anemia?
- Is my anemia likely temporary or permanent?
- What treatments are available and what are the possible side effects?
- What treatment would you recommend me?
- I have other health conditions. How can I best manage these conditions together?
- Do I need to change my diet and follow any dietary restrictions?

For further information, you can speak to your hematologist.

Website resources http://www.hematology.org/Patients/Anemia/

National University Cancer Institute, Singapore

5 Lower Kent Ridge Road, Singapore 119074

Appointment Line: (65) 6773 7888

CancerLine: (65) 9722 0569

Website: www.ncis.com.sg