

PREVALENCE OF IRON DEFICIENCY ANEMIA ETIOLOGICAL AND PREVENTION

Dr. Nawal S Faris

Department of Allied medical sciences (Zarqa University)

ABSTRACT: *Iron-deficiency anemia* is a common anemia (low red blood cell or hemoglobin levels) caused by insufficient dietary intake and absorption of iron, and/or iron loss from bleeding which can originate from a range of sources such as the intestinal, uterine or urinary tract. Iron deficiency causes approximately half of all anemia cases worldwide, and affects women more often than men. World estimates of iron deficiency occurrence are somewhat vague, but the true number probably exceeds one billion people. This is a descriptive study carried out on 1365 patients in different age and gender in the Department of hematology at special Laboratory in south Amman the capital of Jordan between January 2012 to December 2013 using a Celtic instruments and blood film for identification of anemia. The subjects, Red blood cell size and color, concentration of hemoglobin, the percentage of blood volume, were further confirmed for iron deficiency anemia Ferritin test were done. Objective was to determine the Prevalence of Iron deficiency Anemia in childbearing age, adolescent girls, menopause age, toddlers and finally adult male. Prevalence of Iron deficiency Anemia was found to be the predominant in the population which was 42.8%. Among the Iron deficiency Anemia positive (37.5% females, 15% males). Iron deficiency Anemia was in female more than male. We conclude iron deficiency are still relatively common in adolescent girls, and women of childbearing age. alarming condition about Iron deficiency Anemia in Jordan.

KEYWORDS: Iron Deficiency Anemia, Hemoglobin Concentration, Red Blood Count, Blood Film, And Ferritin

INTRODUCTION

Deficiency anemia occurs when your body doesn't have enough iron to produce hemoglobin. Hemoglobin is the part of red blood cells that gives blood its red color and enables the red blood cells to carry oxygenated blood throughout your body. If you aren't consuming enough iron, or if you're losing too much iron, your body can't produce enough hemoglobin, and iron deficiency anemia will eventually develop[1]. Causes of iron deficiency anemia include: Blood loss. Blood contains iron within red blood cells. So if you lose blood, you lose some iron. Women with heavy periods are at risk of iron deficiency anemia because they lose blood during menstruation. Slow, chronic blood loss within the body such as from a peptic ulcer, a hiatal hernia, a colon polyp or

colorectal cancer can cause iron deficiency anemia. Gastrointestinal bleeding can result from regular use of some over-the-counter pain relievers, especially aspirin. A lack of iron in your diet. Your body regularly gets iron from the foods you eat. If you consume too little iron, over time your body can become iron deficient. Examples of iron-rich foods include meat, eggs, leafy green vegetables and iron-fortified foods. For proper growth and development, infants and children need iron from their diet, too. An inability to absorb iron. Iron from food is absorbed into your bloodstream in your small intestine. An intestinal disorder, such as celiac disease, which affects your intestine's ability to absorb nutrients from digested food, can lead to iron deficiency anemia. [4] If part of your small intestine has been bypassed or removed surgically, that may affect your ability to absorb iron and other nutrients. Pregnancy. Without iron supplementation, iron deficiency anemia occurs in many pregnant women because their iron stores need serve their own increased blood volume as well as be a source of hemoglobin for the growing fetus [5]. Initially, iron deficiency anemia can be so mild that it goes unnoticed. But as the body becomes more deficient in iron and anemia worsens, the signs and symptoms intensify. Iron deficiency anemia symptoms may include: Extreme fatigue, Pale skin, Weakness, Shortness of breath, Chest pain, Frequent infections, Headache, Dizziness or lightheadedness, cold hands and feet, Inflammation or soreness of your tongue, Brittle nails, Fast heartbeat, Unusual cravings for non-nutritive substances, such as ice, dirt or starch, Poor appetite, especially in infants and children with iron deficiency anemia, An uncomfortable tingling or crawling feeling in your legs (restless legs syndrome). [6] If you or your child develops signs and symptoms that suggest iron deficiency anemia, see your doctor. Iron deficiency anemia isn't something to self-diagnose or treat. So see your doctor for a diagnosis rather than taking iron supplements on your own. Overloading the body with iron can be dangerous because excess iron accumulation can damage your liver and cause other complications [2]. These groups of people may have an increased risk of iron deficiency anemia: Women. Because women lose blood during menstruation, women in general are at greater risk of iron deficiency anemia. Infants and children. Infants, especially those who were low birth weight or born prematurely, who don't get enough iron from breast milk or formula may be at risk of iron deficiency [4]. Children need extra iron during growth spurts. If your child isn't eating a healthy, varied diet, he or she may be at risk of anemia. Vegetarians. People who don't eat meat may have a greater risk of iron deficiency anemia if they don't eat other iron-rich foods. Frequent blood donors. People who routinely donate blood may have an increased risk of iron deficiency anemia since blood donation can deplete iron stores. Low hemoglobin related to blood donation may be a temporary problem remedied by eating more iron-rich foods. If you're told that you can't donate blood because of low hemoglobin, ask your doctor whether you should be concerned [1]. Mild iron deficiency anemia usually doesn't cause complications. However, left untreated, iron deficiency anemia can become severe and lead to health problems, including the following: Heart problems. Iron deficiency anemia may lead to a rapid or irregular heartbeat. Your heart must pump more blood to compensate for the lack of oxygen carried in your blood when you're anemic. This

can lead to an enlarged heart or heart failure. Problems during pregnancy. In pregnant women, severe iron deficiency anemia has been linked to premature births and low birth weight babies. But the condition is preventable in pregnant women who receive iron supplements as part of their prenatal care. Growth problems. In infants and children, severe iron deficiency can lead to anemia as well as delayed growth and development. Additionally, iron deficiency anemia is associated with an increased susceptibility to infection[6]

Aim of study

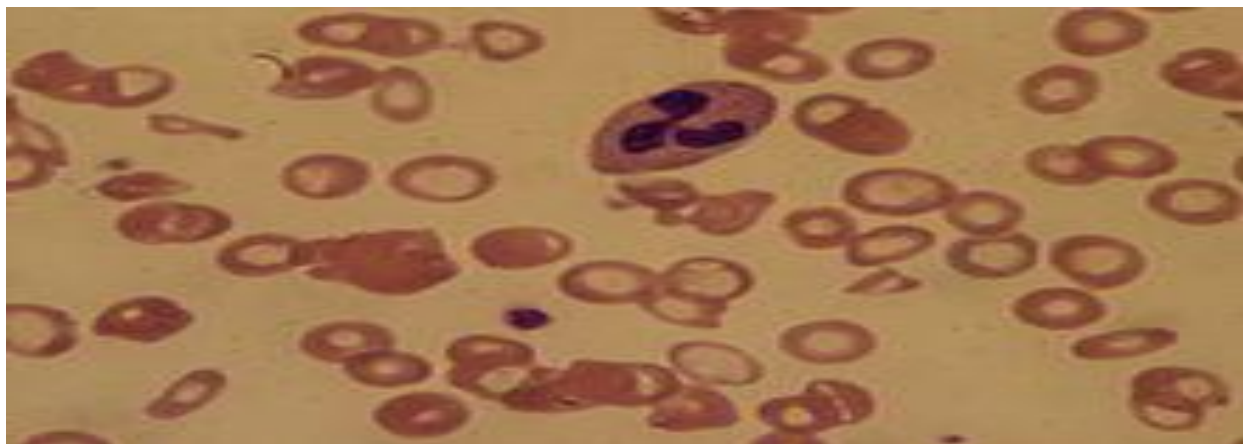
The aim of a study was to determine the prevalence of the Iron deficiency anemia in Jordan during the period 2012-2013. The possible influence of the various factors on the prevalence was analyzed too.

METHODS

From January 2012 till June 2013, a total of 1365 individuals (237 males and 975 females in different age) Worked CBC Count , hemoglobin . MCV MCH, MCHC, and blood film tests at special Laboratory in south Amman. Tow blood samples were collected from each patient, in EDTA tube. Other samples in plan tube EDTA blood from the first tube was tested within half an hours for CBC Count , hemoglobin . MCV MCH, MCHC blood film by microscopic examination , second serum sample was tested for ferritin . Enzyme- Linked Immuno-Sorbent Assay (ELISA) test system using the commercial kit an immune enzymatic (Biokit) kit, which was used to screen all patients for ferritin

RESULTS

A total of 1365 patients (237 males, 957 females in different age) were tested for ferritin total 585 patients were gave low concentration of ferritin , with an overall prevalence of 42.8%. blood film appear micocytic hypochromic red blood cells with anisocytosis and pioklocytosis



The prevalence of iron deficiency anemia is 15 percent in adult men, 37.5 percent in women.

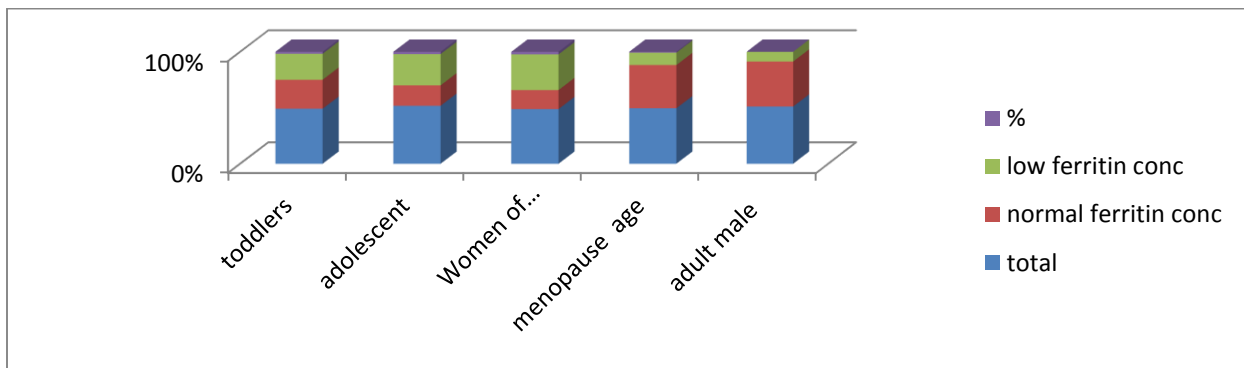
Table 1

Number of patients	Normal ferritin conc	Low ferritin conc	Percentage
Male	237	185	15
female	975	455	37.5
Total	1212	640	42.5

The most commonly low ferritin concentration occur women of childbearing age (24.9%) then adolescent girls (7.3%), menopause age (4.4%), toddlers (3.3%) and finally adult male (2.9%).

Table 2

age	Total	Normal ferritin conc	Low ferritin conc	Percentage
toddlers	95	50	45	3.3
adolescent girls	185	65	100	7.3
Women of childbearing age	520	180	340	24.5
menopause age	270	210	60	4.4
adult male	235	185	40	2.9
Total	1365	690	585	42.8



DISCUSSION

Iron is very important in maintaining many body functions, including the production of hemoglobin, the molecule in your blood that carries oxygen. Iron is also necessary to maintain healthy cells, skin, hair, and nails. Iron from the food you eat is absorbed into the body by the cells

that line the gastrointestinal tract; the body only absorbs a small fraction of the iron you ingest. The iron is then released into the blood stream, where a protein called transferrin attaches to it and delivers the iron to the liver.[7] Iron is stored in the liver as ferritin and released as needed to make new red blood cells in the bone marrow. When red blood cells are no longer able to function (after about 120 days in circulation), they are re-absorbed by the spleen. Iron from these old cells can also be recycled by the body. Women of childbearing age are at higher risk for iron-deficiency anemia because of blood loss during their monthly periods. About 1 in 5 women of childbearing age has iron-deficiency anemia. Pregnant women also are at higher risk for the condition because they need twice as much iron as usual. The extra iron is needed for increased blood volume and for the fetus' growth. About half of all pregnant women develop iron-deficiency anemia.[8] The condition can increase a pregnant woman's risk for a premature or low-birth-weight baby. Adults who have internal bleeding, such as intestinal bleeding, can develop iron-deficiency anemia due to blood loss. Certain conditions, such as colon cancer and bleeding ulcers, can cause blood loss. Some medicines, such as aspirin, also can cause internal bleeding. To prevent iron deficiency you can eat a healthful diet that includes good sources of iron. A healthful diet includes fruits, vegetables, whole grains, fat free or nonfat milk and milk products, lean meats, fish, dry beans, eggs, nuts, and is low in saturated fat, trans fats, cholesterol, salt, and added sugars.

In addition to a healthful diet that includes good sources of iron, you can also eat foods that help your body absorb iron better. For example, you can eat a fruit or vegetable that is a good source of vitamin C (see table on Dietary Sources of vitamin C) with a food or meal that contains non-heme iron (see table below for Dietary Sources of Iron). Vitamin C helps your body absorb the non-heme iron foods you eat, especially when the food containing non-heme iron and the vitamin-C rich food are eaten at the same meal.[9] Red blood cell transfusions may be given to patients with severe iron-deficiency anemia who are actively bleeding or have significant symptoms such as chest pain, shortness of breath, or weakness. Transfusions are given to replace deficient red blood cells and will not completely correct the iron deficiency. Red blood cell transfusions will only provide temporary improvement. It is important to find out why you are anemic and treat the cause as well as the symptoms.[9]

CONCLUSION

Iron deficiency and iron deficiency anemia are still relatively common in toddlers, adolescent girls, and women of childbearing age. Additionally these data contribute to the mapping of iron deficiency anemia prevalence in this geographical area of middle east and therefore may be helpful in planning public health interventional strategies

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