



Common anemia type in children

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Abstract

Background and Objectives: studying types for anemia patients of children age (3month-12years) in the city of kut and diagnosing those most common resulting from having anemia **Methods:** The types of anemia Patients to were studied using CBC analytics caused by having anemia after collecting blood samples from children patients in Al-Karama Teaching Hospital as well as from the to the patients clinics in Kut. **Results:** In this study we found after diagnosis of anemia type(39)cases iron deficiency ,(3)cases thalassemia minor,(3)cases infection anemia, (2)cases plastic anemia ,(1)case megaloblastic ,(1)case bone morro failur,(1)case myeloid leukemia sampleS total (50) cases of anemia patients. **Conclusion:** classify the anemia as microcytic, normocytic and macrocytic is diagnostic approach. Most common from of microcytic anemia is Iron deficiency caused by reduced dietary intake in patients children .

Key Words: Anemia, Anemia types ,Causes of anemia ,Anemia diagnosis

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Introduction

Anaemia is one of the most serious and common nutritional deficiency disorders of public health concern in developing countries (R.M.L.Semedo,et al .2014) . . It can be temporary or chronic and can range from mild to severe,and can also be classified based on the size of the red blood cells and the amount of hemoglobin in each cell . If the cells are small, it is called microcytic anemia ; If it is large, it is called macrocytic anemia ,If it is of normal size, it is called normocytic anemia . The diagnosis of anemia in men is based on a hemoglobin (Hb) less than 130 to 140 g/L (13 to 14 g/dL); In women, it's less than 120 to 130 g/L (12 to 13 g/dL).In men .(PMID.2022)

Awareness about anaemia and its consequences for the health and development of women and children has increased in the past few decades. In 2012, the 65th World Health Assembly approved an action plan and global targets for maternal, infant, and child nutrition, with a commitment to halve anaemia prevalence in women of reproductive age by 2025, from 2011 levels. As such, attention to nutritional interventions, such as the Scaling Up Nutrition

has been placed on the reduction of risk factors that adversely affect women and children, for example in the UN Secretary-General's Every Woman Every Child initiative and the accompanying Global Strategy for Women's and Children's Health. To plan for these programmes and prioritise interventions, information is needed about haemoglobin and anaemia in women and children, and how they have changed over time .(WHO,2011)

Globally, it is estimated that 273 million (approximately 42.6%) of children under five years are anaemic, whilst 60.2% of children under five years in the African region are anaemic (WOH.2015).Used sample collection blood of the patients children , carried out in the laboratories of university of wasit our study.To date, there are few studies that can determined type of anemia common in chelidren in Iraq, . Therefore Sought study to determine anemia is most common in children

The objectives of this study : Studying the types of anemia through complete blood tests for each patient

initiative, has increased. Furthermore, emphasis

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analysis laboratories at AL-Karama Teaching Hospital.

Methods Participants

This study was conducted for a period of one year from October 2021 to October 2022 in the Wasit University College of Education for Pure Science Biology Department, Complete clinical data and blood samples were taken from the anemia injured children age (3month -12year). The study included 70 blood samples, 50 patients, 29 female and 21 males, and the control group was 20 blood samples. We collected data regarding sex (male, female), the age, family history and type of treatment, CBC analyzes were done inside blood

Results

During the period of study (20) control (normal) and (50) patients children anaemia was total (70) sample. Their ages range from (3months - 12 years). There were 21 male and 29 female of group patients children, and (10) male, (10) female of group control. found in the study no significant difference ($p < 0.05$) as shown in Table (3-1)

Table 3-1 : classification of patients according to age and gender

Age group	Gender				Total	
	Male		Female		%	N
	%	N	%	N		
3months-1 year	5	23.8	3	10.3	8	16
2 year-5 year	6	28.5	8	27.5	14	28
6 year-10 year	4	19	10	34.4	14	28
11 year-12 year	6	28.5	8	27.5	14	28
Total	21	100	29	100	50	100
Chi-Square Tests	P-value		0.344			
Control (normal) (3-12 year)	10	50	10	50	20	
Total	31		39		70	

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Of the 50 cases in the present study, The hemoglobin levels ranged from (HB < 11 g/dl), the age group ranged between (3month-12years). There are many classifications of anemia, but the most common and most important clinically significant classification is the mean corpuscular volume (MCV) Found in the study three types of anemia, microcyte (32 out of 50) patients that percentage 64% that was common of all types in the study, Normocyte (17 out of 50) patients that percentage 34%, and macrocyte (1 out of 50) patients that percentage 2%. as shown in table: (3-2)B. So

it was Iron deficiency anaemia microcyte type most common in study. In this study found after diagnosis of anemia type (39) cases iron deficiency, (3) cases thalassemia minor, (3) cases infection anemia, (2) cases plastic anemia, (1) case megaloblastic, (1) case bone marrow failure, (1) case myeloid leukemia sample total (50) cases of anemia patients, As well as study anemia diagnosis classified of severity anemia by level hemoglobin found severe anemia percentage 10%, moderate anemia percentage 70% that is common and mild anemia percentage 20% as shown in table (3-2)A. According to the (World



Health Organization 2015) Anaemia diagnosis is classified as mild (Hb=10.0-10.9 g/dl), moderate (Hb=7.0-9.9 g/dl), severe (Hb<7.0g/dl), and normal (Hb≥11.0 g/dl) Hb level concentration for children . (WHO,2015)

severity	Hemoglobin level	NO.patient	Percentage %
Severe anemia	HB<7g/dl	5	10%
Moderate anemia	HB 7-9.9g/dl	35	35%
Mild anemia	HB10-10.9g/dl	10	10%
	Total.	50	100%

Table (3-2) B Classification of type anemia based on the MCV :

Types anemia	Red blood cell size MCV	NO.pateionts	Percentage %
Microcytic	MCV < 80 FL	32	64%
Normocytic	MCV 80-100 FL	17	34%
Macrocytic	MCV > 100 FL	1	2%
	Total.	50	100%

Discussion

In the study no significant difference(p<0.05) as shown in Table (3-1) .In this study Similar study in Karbala 2021 indicted findings revealed that there was no relation between the type of anaemia and age or sex(albaroodi K,2021). And study in Bagdad indite ,The statistical analysis shouwed no significant relation between age and prevalence of anemia and no significant relation was noticed between gender with anemia (Zeki;Warid ,2019).Study in Tanzania indicate that younger children(under 2 years) were more likely to be anemia compared to their older peers (Kejo D.et al, 2018).Anemia is major source of morbidity and mortality worldwide (Vijay G.,2015). Globally it is estimated that 273 million (approximately 42.6%)of children under five years are anemia whilst 60% of children are anemia in the African region are anemia (WHO,2015).

There are many classifications of anemia, but the most common and most important clinically significant classification is the mean corpuscular volume (MCV)

classify the anemia as microcytic,normocytic and macrocytic is diagnostic, and common from of microcytic anemia is Iron deficiency caused by reduced dietary intake in patients children . This study similar study in Mosul The type of anaemia in the remainder was classified according to the red cell morphology into: Hypoehromic microcytic, normochromic normocytic, normochromic macrocytic and dimorphic.(Sana M. Taib ,2012). Study similarity 2021in Karbala This study revealed that the most common type of anaemia in Karbala was iron deficiency (albarroodi K,2021),

study in India indicate. Prevalence of anemia in the study subjects with microcytic hypochromic anemia accounting for 84% in children, followed by normocytic normochromic anemia accounting for 7%. Iron deficiency anemia accounted for 80% in children, followed by anemia of chronic disease accounting for 8%.(Mohmmed A,Yogender P. 2018). And Study in the United State indicate , The most common form of microcytic anemia is iron deficiency caused by reduced dietary intake (Joseph J,2001).

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In this study found dignosis 39 cases was Iron deficiency out 50 patiente and that was common to all anemia types because the children developing and growing rapidly and because the stored iron from the mother may be deficient addition of complementary food during this period is important. Complementary foods influence the overall nutritional status of the children. Studies indicat in karbala These results show that anaemia in Iraq may be related to malnutrition and poverty (albaroodi K 2021) ,and in Baghdad result showd asignificant relationship of both the type anemia and nutritional status with the infection of ameloblastic condition.(Zeki;Alwarid 2019) Also



study in, Babylon University (2002) found that 37% of anemia subjects had gastrointestinal parasitic infection (ALZubadi ZH, 2002). In Korea showed that the combination of prolonged breastfeeding and an inadequate supply of red meat results in iron deficiency and iron deficiency anemia. Insufficient complementary feeding behavior is associated with undernutrition, which results in poor growth and cognitive development (Hong J et al. 2017). Many influences contributing to anemia, which are increasing energy expenditure, irregularly eating habit, lacking maternal attention, and infections, particularly parasitic infections that are common in children (WHO, 2001). Helminthic infections cause anemia by dropping iron uptake from the intestine (Adebara, O.V. 2011). And that similar study in American (Joseph J, 2001). According to WHO (2004) reports, one third of the global populations (over 2 billion) are anemia due to imbalance in their nutritious food intake. Several things can cause anemia including malnutrition (including folate, vitamin B12, and vitamin A), acute and chronic inflammation, parasitic infections, and congenital or acquired abnormalities that affect the synthesis of hemoglobin and red blood cell production, or survival of red blood cells.

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- 75 Study of pattern of anemia in children in and around Mahabub Nagar Mohammed Abdul Wahab¹, Yogender Patwari^{2,*} ¹Assistant Professor, Apollo Institute of Medical Sciences and Research, Hyderabad, Telangana, ²Assistant Professor, Dept. of Pathology, Mandya Institute of Medical Sciences, Mandya, Karnataka, India *Corresponding Author: Email: yogi5300@gmail.com
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