Prevalence of Anemia in Iraqi Children

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ABSTRACT

A demographic survey was conducted in Wasit Governorate, Iraq, where 45 children were collected from Al-kut Hospital for Gynecology and Obstetrics, Wasit, Iraq. Our study was limited to children between the ages of 10 months to 45 months.
This paper aims to investigate and know the Prevalence of Anemia in Iraqi Children and the evaluation stages were adopted to the exclusionary studies to confirm the anemic children
by relying on the statistical analysis program spss soft, the MEAN SD was found to the patients' ages of 28.04 ± 8.82, and the patients were divided to 30 boys and 15 girls.
It was concluded from this study that anemia has a significant impact on children as it depends on several determinants, including the type of breastfeeding in addition to iron supplementation and other important factors.

Keywords: Anemia, paediatrics, methemoglobin, supplementation.

Introduction

Anemia has been one of the major global public health problems for several years, and the prevalence of disease in developing countries is much higher than in developed countries. In my country, children and adolescents are one of the four groups prone to anemia, are in a critical period of growth and development, and are at risk of developing anemia due to insufficient iron intake or reserves. Due to the reduced ability of the blood to carry oxygen, the patient's physical strength decreases, which leads to a decrease in learning efficiency. Long-term anemia can lead to severe adverse effects such as cognitive and psychomotor retardation and various infections due to reduced levels of immunity.

In previous studies, an age-specific cutoff for hemoglobin concentration was used to determine anemia. For three different age groups, hemoglobin is divided into four categories: (1) 5-11 years: ≥ 115 g/L normal, 110-114 g/L mild anemia, 80-109 g/L moderate anemia, <80 g/L L severe anemia; (2) Children 12-14 years old and non-pregnant women over 15 years old: ≥ 120 g/L normal,

110-119 g/L mild anemia, 80-109 g/L L moderate anemia, <80 g / l severe anemia; (3) For men older than 15 years: ≥ 130 g/L normal, 110-129 g/L mild anemia, 80-109 g/L moderate anemia, <80 g/L severe anemia.

Ultimately, the study found that between 1995 and 2010, average hemoglobin concentrations in Iraqi children increased, from 132.9 g/L to 138.3 g/L in boys and 127.7 g/L to 132.3 g/L in girls. The prevalence of anemia among children of all ages has decreased significantly, with the overall prevalence falling from 18.8% in 1995 to 9.9% in 2010.

In terms of differences between urban and rural areas in Iraq, the prevalence of children in rural areas was higher than that of children in urban areas in all age groups. The odds ratio between girls and boys increased over time in both urban and rural children.

In terms of gender differences, among school-age children in Iraq, hemoglobin concentrations were found to increase more rapidly in boys than in girls, so the relative prevalence of anemia increased in girls compared to boys, and the average boys increased in each survey. The hemoglobin concentration was higher than that of girls, and the odds ratio for the spread of girls to boys gradually increased over time in each survey, regardless of whether it was urban children or rural children.

Material and method

Patient sample

A demographic survey was conducted in Wasit Governorate, Iraq, where 45 children were collected from Al-kut Hospital for Gynecology and Obstetrics, Wasit, Iraq. Our study was limited to children between the ages of 10 months to 45 months.

Study design

Peripheral blood was collected from the left ring finger by spectrophotometry, and the hemoglobin (Hb) content was determined by the cyanide-methemoglobin method, positive, where the normal value and diagnostic criteria for anemia are based on the World Health Organization and the United Nations Children's Fund. Children 6 months to less than six years of age below the diagnostic criteria for anemia in children with 110 g/L [2]

Anemia occurs when there are too few healthy red blood cells in the blood or when the hemoglobin level is lower than normal.

Hemoglobin carries oxygen in the blood from the lungs to the rest of the body. Whether or not you have anemia can be checked by doing a complete blood count. It helps to know the number of red blood cells and the amount of hemoglobin in the blood

Anemia leads to a decrease in the number of red blood cells, the amount of hemoglobin, and your hematocrit. The average red blood cell volume (MCV) and the average amount of hemoglobin within the red blood cell (mean corpuscular hemoglobin (MCH)) are also calculated from the sample.

Using the questionnaire, analysts who have undergone standardized training and assessment conduct face-to-face interviews or telephone surveys of parents on the rat subject. The contents of the questionnaire included gender, age, birth weight, gestational age at birth, whether iron supplementation during pregnancy, childhood nutrition, nutritional structure, time of switching to complementary foods, family economic conditions, children's health, and general information about parents.

Study period

The study period was extended for two years from 3-3-2018 to 4-7-2020, including the collection of demographic data and information, in addition to the analysis of the results of the questionnaire

Aim of research

This study aims to investigate and know the Prevalence of Anemia in Iraqi Children.

Results

Table 1- mean SD age of patients (month)

Statistics		
Age		
N	Valid	45
	Missing	0
Mean		28.0444
Median		27.0000
Mode		27.00[a]
Std. Deviation		8.82135
Skewness		.011
Std. Error of Skewness		.354
Range		35.00
Minimum		10.00
Maximum		45.00
a. Multiple modes exist. The smallest value is shown		

Figure1 - distribution of patient according to gender and Nutritional status

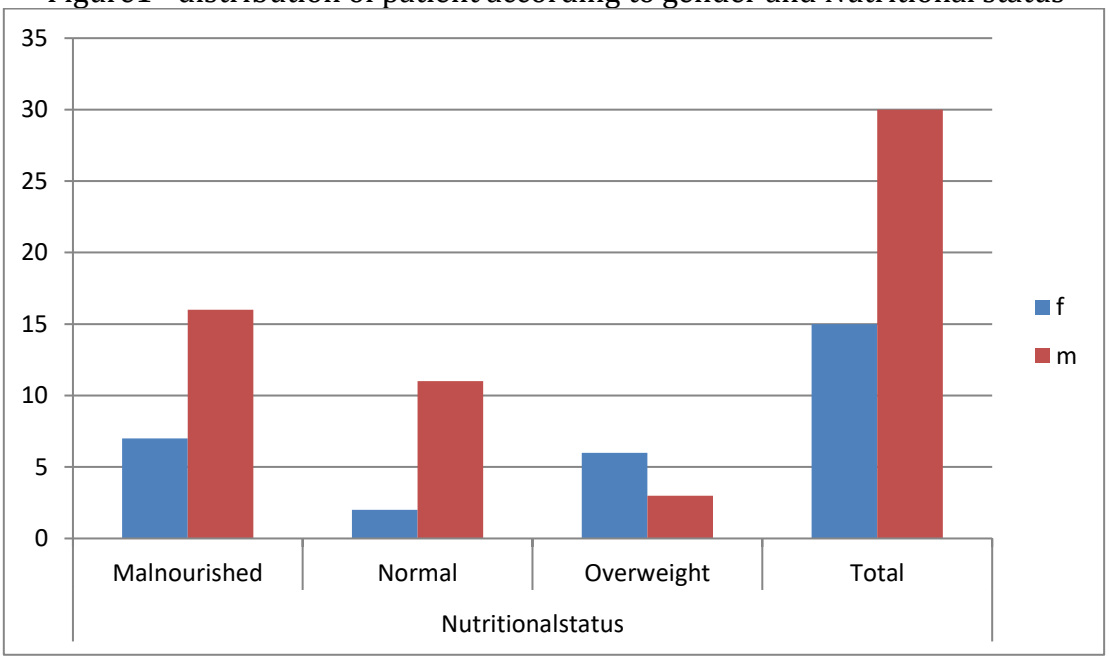

Table 2- demographic results

BW		
< 2500	6	13.3
≥ 4000	23	51.1
2500–3999	16	35.6

Total	45	100.0
malaria		
no	19	42.2
yes	26	57.8
Nutrient supplements		
no	24	53.3
yes	21	46.7
occupation Mother		
college	8	17.8
high	10	22.2
no education	9	20.0
primary	8	17.8
Secondary	10	22.2
Total	45	100.0
Mother's anemia		
no	20	44
yes	25	56
Anemia-related feeding knowledge level		
high	12	26.7
Low	9	20.0
Moderate	24	53.3
Total	45	100.0

Table 3- Descriptive age with severity of Anemia

Descriptive					
	severity			Statistic	Std. Error
age	Mild	Mean		32.2857	1.54219
		95% Confidence Interval for Mean	Lower Bound	28.9540	
			Upper Bound	35.6174	
		5% Trimmed Mean		32.4841	
		Median		33.5000	
		Variance		33.297	
		Std. Deviation		5.77033	
		Minimum		22.00	

		Maximum		39.00	
		Range		17.00	
		Interquartile Range		11.00	
		Skewness		-.303	.597
		Kurtosis		-1.426	1.154
	Moderate	Mean		26.5833	2.06140
		95% Confidence Interval for Mean	Lower Bound	22.0462	
			Upper Bound	31.1204	
		5% Trimmed Mean		26.0370	
		Median		25.5000	
		Variance		50.992	
		Std. Deviation		7.14090	
		Minimum		18.00	
		Maximum		45.00	
		Range		27.00	
		Interquartile Range		7.75	
		Skewness		1.548	.637
		Kurtosis		3.593	1.232
	severe	Mean		25.8421	2.45457
		95% Confidence Interval for Mean	Lower Bound	20.6852	
			Upper Bound	30.9990	
		5% Trimmed Mean		25.6579	
		Median		26.0000	
		Variance		114.474	
		Std. Deviation		10.69924	
		Minimum		10.00	
		Maximum		45.00	
		Range		35.00	
		Interquartile Range		15.00	
		Skewness		.281	.524
		Kurtosis		-.840	1.014

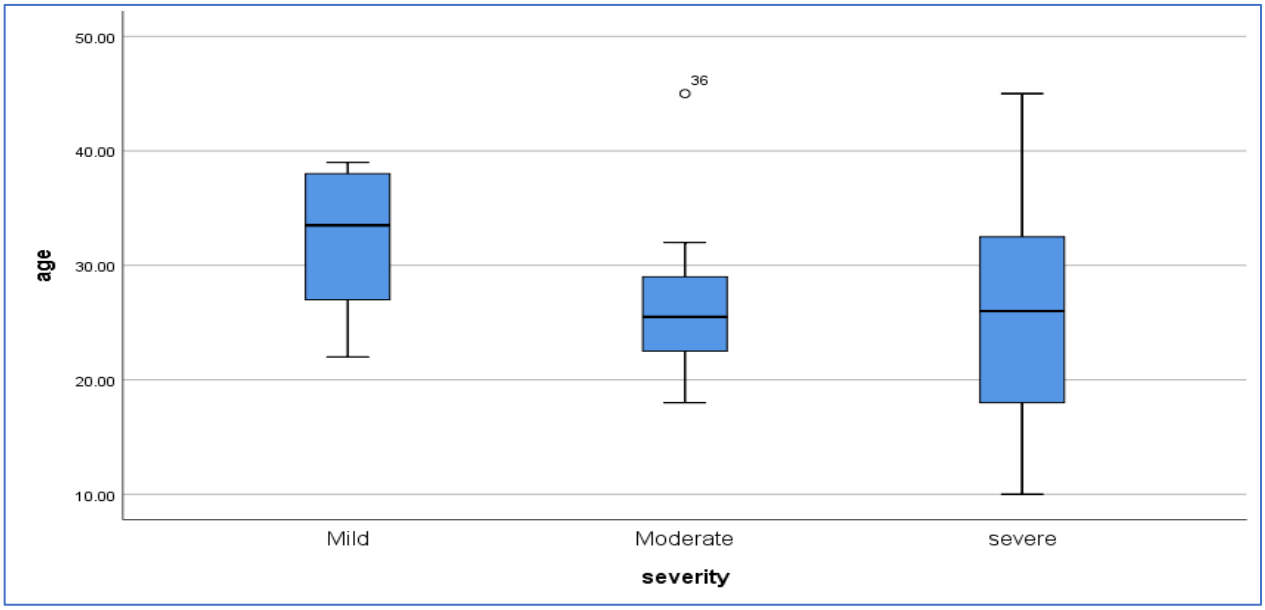

Figure 2- relationship to explain HV of severity of Anemia

Discussion

Forty-five patients were collected from Al-kut Hospital for Gynecology and Obstetrics, Wasit, Iraq for the purpose of knowing the prevalence of anemia among Iraqi children in Wasit Governorate, and by relying on the statistical analysis program spss soft, the MEAN SD was found to the patients' ages of 28.04 ± 8.82, and the patients were divided to 30 boys and 15 girls.

By looking at Figure 1, which shows the distribution of patient according to gender and nutritional status, where we find that malnourished in women is more than in males, as for overweight, it was in boys at a higher percentage than girls, and in relation to birth weight, it was between 2500-3999 g for 16 patient and > 2500 g for six patients, and malaria was found in children for 26 patients

A recent study showed that an increase in the duration of breastfeeding is associated with an increased risk of iron deficiency in healthy children.

Where researchers conducted a study that included 1,647 healthy children aged 1 to 6 years to examine the link between breastfeeding duration, iron levels in the blood, iron deficiency, and iron deficiency anemia.

The researchers identified a clear relationship between an increase in the duration of breastfeeding and a decrease in iron levels in the blood. Whereas, with an increase in the number of months of breastfeeding, the risk of iron deficiency increased by 4.3%.

The cumulative probability of iron deficiency increased with the increase in the duration of breastfeeding by 1.71% after adjusting for the different factors for the children who were breastfed compared to the children who were breastfed for less than 12 months.

The researchers said that these results are clinically important to initiate further studies that may influence the update of new recommendations to assess the risk of iron deficiency in infants. The researchers pointed out the need for institutions and pharmaceutical companies to pay attention to developing iron supplements that are suitable for children

As reported, the practice of feeding was closely associated with childhood anemia, and breast-feeding was more likely to develop anemia in childhood than artificial feeding.

Exclusively natural and mixed feedings increase risks of iron deficiency and iron-deficiency anemia among 9-month-old infants. A cross-sectional study conducted in South Korea also found that infants aged 8-15 months who were fed only or primarily breast milk may be more susceptible Iron deficiency anemia and iron deficiency anemia.

Conclusion

As an indispensable part of infant growth and development, iron is primarily involved in the development of the body's hematopoietic function and the healthy development of the nervous system. Studies have shown that childhood anemia can lead to developmental impairments in cognitive and behavioral functions, and even with early treatment, some behavioral deficiencies persist into adulthood. Because the fetus cannot get enough iron from the mother, eating Iron after birth is seriously insufficient. The growth and development of infants and young children is rapid, and the demand for iron increases accordingly. If the intake of iron is insufficient, this will directly affect its physiological and intellectual development reduce the body's immunity. When comparing our study with other studies such as JS Reading, the results of this study showed that the incidence of IDA in children under one year of age was 37.5%. It indicates that there are also differences in annual income and its impact on the anemia factor in children, especially in poor areas. The results of this study showed that from 6 months to less than a year, exclusive breastfeeding, premature infants, diet and no iron supplementation during pregnancy, annual household income for ferrets and remote areas, etc. Factors contributing to anemia

Recommendation

1. Treatment of anemia depends on the form of the disease and the causes of its development. This includes taking iron and vitamin supplements, healthy

eating, and in some cases, blood transfusions. It is forbidden to treat anemia on your own; the doctor must prescribe drugs according to a blood test. With iron deficiency anemia, drugs with a high iron content are prescribed, which must be taken for four months. The patient must strictly adhere to a diet that includes meat, vegetables, and fresh juices. Most of the iron is found in beef tongue and pork, and iron from vegetables is practically not absorbed by the body.

2. In severe cases of anemia, iron preparations are given intravenously. With the diagnosis of pernicious anemia, cyanocobalamin and vitamin B12 are prescribed. Treatment of hemolytic anemia includes taking corticosteroids, and in severe cases, the spleen is removed. With severe bleeding, it must stop. In case of chronic blood loss, treatment is prescribed to eliminate the causes of the disease.
3. In some cases, anemia is treated with blood transfusion, in severe cases of the patient: profuse blood loss, the formation of tumors, and hereditary diseases. Aplastic anemia involves surgery and a bone marrow transplant.

Prevention of anemia

1. Measures to prevent anemia include adherence to good nutrition, intake of vitamin B12, strengthening the general condition of the body. Include foods rich in iron and folic acid in your diet. Iron is present in large quantities in animal protein, so you need to eat enough meat. Don't go overboard with diets and lose weight, as this can lead to anemia. It is necessary to maintain the normal state of the digestive system in order for the body to absorb food well.
2. Prevention of anemia includes taking vitamin B12 and folic acid, as these substances play a large role in the formation of red blood cells. Among the folk remedies, tinctures from dandelion plants, young nettles, yarrow herbs are distinguished. You can also make fresh salads by adding vegetable oil from them. In order for the iron to be well absorbed by the body, it is necessary to include foods containing folic acid and vitamin C in the diet.
3. A high level of vitamin C is found in rose hips, leaves, and fruits of black currant, mountain ash, and hawthorn inflorescences. From them, you can prepare tea and tinctures and use fresh. Fresh parsley, spinach, lettuce, and other greens are rich in iron and folic acid. Very useful for anemia are fresh juices made from beets, apples, pomegranates, carrots, and pumpkins. Dried fruits contain a large amount of iron: dried apricots, prunes, raisins.
4. Anemia prevention includes regular walks in the fresh air, an active lifestyle, and gentle sports. Avoid heavy physical exertion, fatigue, and stress. Pregnant women are advised to take additional vitamins and folic acid since during this period, the need for iron doubles.

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