Background and Aims Iron deficiency anemia is one of the most common nutritional deficiencies and public health around the world. The growing Children are one of groups that are at high risk for this problem. Iron deficiency anemia can cause mental, motor or behavior problems. So early diagnosis and treatment can prevent great side effects. One of the diagnosis means is measuring of soluble tranferrin receptor level (sTfR) in serum because level of this receptor increase in result of iron depletion in iron deficiency but has no change in other.

Methods and materials: This was a case control study included 64 children with iron deficiency anemia (IDA) and healthy subjects. The study conducted, in 2008–2010 in Children Medical Center. Blood samples collected from every patient in case and control groups and Hb, MCV, Fe, Ferritin, TIBC and sTfR measured and compared in the groups.

Results Compared to the control group, serum sTfR mean level was significantly higher in children with IDA than control group (1.87 vs. 1.06 μg/ml, P value = 0.002). sTfR showed negative correlations with Hb (r = –0.629, p < 0.001), MCV (r = –0.649, p < 0.001) and serum Ferritin (r = –0.224, p = 0.053), although it was not significant for Ferritin. There was no significant differences between cases and controls in sTfR mean level with regard to gender and age categories (P > 0.05).

Conclusions This study shows sTfR level can be an appropriate biomarker for diagnosis of IDA, particularly in patient with IDA coexisting with inflammation.

**Late effects in survivors of infant leukemia in single center**

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**Background** Acute lymphoblastic leukemia (ALL) is the most common childhood malignancy, accounting for 30% of all cancers occurring in childhood. Long-term sequel of treatment are now being reported. Children who survive acute lymphoblastic leukemia are at risk for leukemia-related or treatment-related complications.

**Methods** In this study we evaluated 66 patients with ALL who have survived for more than 5 years after diagnosis. Long-term sequel of treatment, such as impaired intellectual and psychomotor functioning, neuroendocrine abnormalities, impaired reproductive capacity, cardio toxicity, and second malignant neoplasm’s, are being reported.

**Results** of the 66 patients, 43 cases were male and 23 female. Mean age was 14.59±4.36(range 10–25 years). 42 patients received chemotherapy alone, 24 patients who received chemotherapy and CNS radiation therapy. Short height 33.3%, over weight 50%, low bone density 53%, learning disabilities 6/1%, hyperthyroidism 1/5%, sexual development (pubertal delay) 7/6%, over weight are more common in children who get chemotherapy without radiotherapy. 31/8% of patients don’t have late effects. 30/3% had at least one late complication.

**Conclusions** These results indicate that late sequelae are common in long term survivors of infant leukemia and are often related to CRT the most common problem are short stature and over weight.

**Evaluation of serum transferrin receptor in patients affected by iron-deficiency anemia and comparison with control group**

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**Background and Aims** Iron deficiency anemia is one of the most common nutritional deficiencies and public health around the world. The growing Children are one of groups that are at high risk for this problem. Iron deficiency anemia can cause mental, motor or behavior problems. So early diagnosis and treatment can prevent great side effects. One of the diagnosis means is measuring of soluble tranferrin receptor level (sTfR) in serum because level of this receptor increase in result of iron depletion in iron deficiency but has no change in other.

**Methods** and materials: This was a case control study included 64 children with iron deficiency anemia (IDA) and healthy subjects. The study conducted, in 2008–2010 in Children Medical Center. Blood samples collected from every patient in case and control groups and Hb, MCV, Fe, Ferritin, TIBC and sTfR measured and compared in the groups.

**Results** Compared to the control group, serum sTfR mean level was significantly higher in children with IDA than control group (1.87 vs. 1.06 μg/ml, P value = 0.002). sTfR showed negative correlations with Hb (r = –0.629, p < 0.001), MCV (r = –0.649, p < 0.001) and serum Ferritin (r = –0.224, p = 0.053), although it was not significant for Ferritin. There was no significant differences between cases and controls in sTfR mean level with regard to gender and age categories (P > 0.05).

**Conclusions** This study shows sTfR level can be an appropriate biomarker for diagnosis of IDA, particularly in patient with IDA coexisting with inflammation.
Background Growth assessment is an integral part of infants' health. An understanding of anemia risk factors is essential to identify the groups that are more vulnerable.

The Aim of the study was to identify the risk factors for malnutrition in the vulnerable age group of 6 to 12 months and to evaluate possible related risk factors with anemia.

Methods The cross-sectional study which evaluated 206 infants aged between 6–12 months who attended the Pediatric Clinic during the years 2010–2011 for inadequate growth. Mothers were interviewed to collect informations regarding socioeconomic status and nutrition practices. Nutritional status was evaluated by anthropometric measurements using growth charts. Anemia was diagnosed if hemoglobin was ≤11 g/dL.

Results Mild and moderate anemia was characterised by hemoglobin levels below 11.0 and 9.5 g/dL. Rates for mild and moderate anemia were 38.6% and 11.9%. The highest anemia prevalence was found at 6 to 8 months of age. The risk factors for anemia were:

- urban residence (p=0.004), fever in the past 5–7 days (p<0.001) and age at 6–8 months (p=0.024), socioeconomic level and nutrition practices.

Infants who were exclusively breastfed for 6 months showed lower prevalence of anemia compared to their mixed feeds.

According to weight and length for-age, 49% of the infants were stunted. The prevalence of anemia showed lower in males compared to females (46.8% vs 51.5%, p=0.024). The highest anemia prevalence was observed at 25th, 32% at 10th, 9.2% at 5th and there was a significant correlation between the duration of breastfeeding and nutritional status.

Conclusions Strategies to control infant anemia should include health promotion and nutritional education for families from all socioeconomic levels.

High Incidence of Iron Deficiency in Young Children with Cystic Fibrosis


Background Iron deficiency (ID) is common in patients with cystic fibrosis (CF). In adult CF patients ID is related to lung disease severity and thought to be caused by chronic inflammation. Increased iron levels in sputum are associated with P. aeruginosa infections.

Aim To establish the prevalence of ID and iron deficiency anemia (IDA) in children with CF and associations of ID with dietary iron intake, lung disease severity and Pseudomonas aeruginosa infection.

Methods Clinical charts of 54 children with CF aged 0 to 16 were reviewed. Follow-up varied from 1 to 14 years with 346 annual observations in total. Laboratory data (hemoglobin (Hb), serum ferritin (SF)) and results of pulmonary function tests, sputum cultures and 3-day food records were collected.

Results 46 children (85.2%) were iron deficient (SF<30µg/l) in at least one year and ID was present in 329 of 346 observations (91.1%). Children with ID were younger (6.4 year versus 10.6 year, p=0.00) and had less pulmonary exacerbations (p=0.01). ID was not associated with the study's lung function marker.

Conclusion ID is common in young children with CF and associated with less pulmonary exacerbations. We suggest that ID in these children is caused by rapid growth and accelerated erythropoiesis instead of disease severity or insufficient dietary iron intake.

Serum Hepcidin in Children with Beta-Thalassemia

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Background Hepcidin, first described about 10 years ago, is a key iron - regulatory hormone. However, hepcidin measurement in a variety of human disease states are still lacking.

Aim To study serum level of hepcidin hormone in children with beta-thalassemia major (TM) and intermedia (TI).

Subjects and Methods The work was conducted on 50 children divided into 3 groups: 15 children with beta-thalassemia major, 10 children with beta-thalassemia intermedia, and 25 healthy children as a control group.

Thalassemic children included in the study were subjected to: Detailed history taking, clinical examination and measurement of serum hepcidin hormone level by (ELISA).

Results The mean serum hepcidin level was significantly higher in children with TM than in patients with TI and the controls. The ratio of serum hepcidin to serum ferritin in TI was significantly lower than those with TM. In addition, there was a significant positive relation between serum hepcidin and serum ferritin and also with serum iron.

Conclusions Hepcidin measurement may be useful as part of the diagnostic and prognostic evaluation of thalassemia as it may allow a more accurate assessment of the degree of iron overload and the maldistribution of iron.

In the future, it may be possible to use exogenous hepcidin to restore normal iron homeostasis in patients with thalassemia especially thalassemia intermedia.