



Prevalence of Anemia in Pre-School Children (3 To 5 Years)
(A Hospital Based Study)

Unnikrishnan SR*

Department of Paediatrics, Sree Balaji Medical College and Hospital, Chennai, India

*Corresponding Author: Unnikrishnan SR, Department of Paediatrics, Sree Balaji Medical College and Hospital, Chennai, India.

Received: March 24, 2018; Published: May 25, 2018

Abstract

Paediatric Haematology is a sub speciality of Paediatrics and a sine qua non of the modern teaching institutions. Among the haematological disorders, Anemia is the commonest entity of multiple aetiologies. The meaning of the Greek word “Anemia” is without blood.

Study Population: Children who were admitted in the Department of Paediatrics at Sree Balaji Medical College Hospital and Research centre, chrompet, Chennai.

Study Group: A total number of 200 cases of anemia were studied. Our cases consist of in -patients of the age group 3 to 5 years (Preschool children) in Sree Balaji Medical College Hospital and Research centre, chromepeet, Chennai who were admitted for evaluation of anemia.

Keywords: Anemia; Pre-School Children

Introduction

Pediatric Hematology is a sub speciality of Pediatrics and a sine qua non of the modern teaching institutions. Among the hemato- logical disorders, Anemia is the commonest entity of multiple aeti- ologies. The meaning of the Greek word “Anemia” is without blood.

Anemia is a major world health problem and is an important cause of morbidity and mortality much of which can be prevent- able. Man has only partially adapted to the rapid growth in human population and environmental changes and Anemia is one of the effects of these factors. Thus, still the most common cause of Ane- mia in children is related to nutritional deficiency especially iron deficiency. Initially man depended mostly on animal food, and as he learned agricultural practices, the contribution of animal food re- duced drastically to less than 5%. This profoundly affected the bio available Iron and folate resulting in nutritional deficiency Anemia.

Aims and Objectives

1. To study the Prevalence of Anemia in preschool children (3 to 5) years of age.
2. To study the ethology and pathology of anemia in pre school children (3 to 5) years of age admitted in Sree Balaji Medical College Hospital and research centre, chromepeet, Chennai.

Materials and Methods

Study Population

Children who were admitted in the Department of Paediat- rics at Sree Balaji Medical College Hospital and Research centre, chrompet, Chennai.

Study Group

A total number of 200 cases of anemia were studied. Our cases consist of in -patients of the age group 3 to 5 years (Preschool chil- dren) in Sree Balaji Medical College Hospital and Research centre, chromepeet, chennai who were admitted for evaluation of a nemia.

Study Period

June 2015 to June 2016.

Study Design

Observational study.

Inclusion Criteria

The criteria used in the selection of children was those whose haemoglobin less than 11 gm % based on WHO recommendation in the age group of 3 to 5 years.

- 10 - 10.9 g/dl-Mild Anemia
- 7 - 9.9 g/dl-Moderate Anemia
- < 7 g/dl-Severe Anemia

Exclusion Criteria

We have excluded cases less than 3 years of age and above 5 years of age.

Ethics Committee Approval was Obtained.

Methods

All the 200 cases of anemia were studied by taking detailed his- tory and thorough clinical examination and the findings were re- corded in the predesigned proforma annexed in the last few pages. These cases were evaluated with the following investigations.

Observations, Analysis and Results

Sex	No. of cases	Incidence
Males	104	52%
Female	96	48%

Table 1: No of Cases.

Of 200 children, 104 were males, 96 were females.

There did not seem to be a significant difference in the incidence of anemia among both sex (p > 0.05).

No	Degree of Anemia	Mild (10 - 10.9 gm%)	Moderate (7 - 9.9 gm%)	Severe (< 7 gm %)
1.	Number of cases	84	76	40

Table 2: Severity of Anemia.

Of the above analysis, 40 cases of severe anemia, 76 cases of moderate anemia, 84 cases of mild anemia were documented. The mean value of Hb in this study is 6.98 (+ 2.65) gm %.

Degree of A nemia	Male	Female	Total
Mild (10 - 10.9 gm%)	40	44	84
Moderate (7 - 9.9 gm %)	42	34	76
Severe (< 7 gm%)	22	18	40
Total	104	96	200

Table 3: Relationship between sex and severity of anemia.

There is no statistical difference between Sex and Severity of Anemia.

‘p’= 0.4392 (not significant)

Discussion

The Prevalence of Anemia in 200 preschool children were analysed and discussed here.

In our study 42% children had mild degree anemia 38% had moderate degree anemia and 20% had severe degree anemia from which hypochromic anemia was the most common type (44%) followed by dimorphic anemia (40%).

According to National Family Health Survey (NFHS - 4) data, prevalence among children less than five years of age was reported to be 60% [1].

In India, 89 million preschool age children suffer from Anemia [2]. As per the World Bank data, the prevalence of anemia among under 5 children, in India is 59% in 2011 [3].

A study by Shally Aswathi, Rohini Das, Tuhina Verma and Sheila Vir on prevalence of Anemia in pre school children in Nindura block, Barabanki d istrict Uttar Pradesh reported a high prevalence of 70% [4]. A study by N Arlappa., et al. on pre -school children in rural areas of West Bengal showed prevalence was significantly higher among 1 - 3 years of age (91%) as compared to 4-5-year-old (74.6%) [1].

A study by N. Arlappa., et al. among rural pre -school children of Maharashtra showed a higher prevalence among 1 - 3 years of age (76.5%) as compared to 4 - 5 years of age (53.6%).

A study by Sharma Anna, Giri Abhishek, Pudasaini Sujatha in Nepal on prevalence of Anemia in children showed a prevalence of mild anemia of 83.3% and moderate anemia of 16.7% in 1 year to 5 years of age [5-10].

According to a study by Singh Ritu., et al. in a teritiary hospital in Port Blair, Andaman Islands showed a prevalence of 43.9% in 2 - 4 years of age and 30.9% in 4 - 6 years of age [4].

Conclusion

1. The most common cause of Anemia in preschool children is Nutritional (Iron) deficiency Anemia (83%).
2. Hypochromic microcytic (44%) and Dimorphic Anemia (40%) were the commonest findings in peripheral smear.

3. Most of the children (80%) had mild to moderate Anemia.
4. There was a good correlation between Iron deficiency Ane-mia and Protein energy malnutrition. Anemia becomes se-vere with severe PEM.
5. Red cell distribution width done with modern automated blood cell counters is a useful parameter to distinguish be-tween Iron deficiency anemia and other type anemia.
6. Measurement of serum ferritin is costly, time consuming and cumber some though it is confirmatory. RDW over-comes all the above problems.
7. Other investigations like Bone marrow aspiration study, Lymph node biopsy, Hemoglobin Electrophoresis may be needed in some occasions.

Bibliography

1. Key Findings from NFHS (2016).
2. Arlappa N., et al. “Prevalence of anaemia among rural pre -school children of West Bengal, India”. *Annals of Human Bi-ology* 37.2 (2010): 231-242.
3. McLean E., et al. “Worldwide prevalence of Anemia, WHO Vitamin and Mineral Nutrition Information System, 1993–2005”. *Public Health Nutrition* 12.4 (2009): 444-454.
4. Ritu S., et al. “A Hospital Based Study on Anemia Prevalence in Children of an Indian Island”. *International Journal of Pe-diatrics* 5.12 (2017): 6245-6252.
5. Sharma A., et al. “P revalence of anemia in children aged 6 months to 15 years: a hospital-based study”. *Journal of Pa-thology of Nepal* 7.2 (2017): 1168-1171.
6. Muthusamy BG., et al. “Prevalence of anaemia among the hospitalized children in a rural tertiary care teaching hos-pital”. *International Journal of Contemporary Pediatrics* 4.2 (2017): 431-437.
7. Garg N and Bhalla M. “To study the prevalence of anaemia among school going children in rural area of Faridkot dis-trict, India”. *International Journal of Contemporary Pediatrics* 3.1 (2016): 218-223.
8. Nanjunda N. “Prevalence of Under -Nutrition and Anemia among Under Five Rural School Children in South Karna-taka, India”. *Kerala Medical Journal* 7.1 (2014): 9-12.
9. Saba F., et al. “Anemia among hospitalized children at a mul-tispecialty hospital, Bangalore (Karnataka), India”. *Journal of Family Medicine and Primary Care* 3.1 (2014): 48-53.
10. Singh RK, Patra S. “Extent of anaemia among preschool chil-dren in EAG States, India: a challenge to policy makers”. *Ane-mia* (2014): 9.