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Editorial
Anemia

Nutritional anemia in children: an overview

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Developing countries are facing dual nutritional disorder. Under nutrition still affects more than half of under five children. Nutritional anemia is important component of Malnutrition which affects Obese as well as undernourished children.

Keywords: Nutritional anemia, Undernutrition, Obesity, Children

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Nutritional anemia is caused by deficiencies of iron, riboflavin, folic acid, zinc, vitamin B12, protein, pyridoxine, vitamin C, copper & vitamin E. Nutritional anemia develops secondary to poverty, malnutrition, large family size, faulty dietary habits & repeated infections. It affects nearly 1.62 billion people worldwide with the highest prevalence (47.4%) among preschool-aged children [1]. According to WHO, anemia adds to 324,000 deaths & 12,500,000 disability adjusted life years (DALYs) in south east asian region, which is the highest in the world [2]. In Asia 58% of preschool aged children are anemic. Preschool children in India constitute about 16% of the total population which are vulnerable from the nutritional standpoint. The prevalence of anemia among children 6-35 months has increased from 74 % in National Family Health Survey II (NFHS-2) to 79 % in NFHS-3 [3]. In India, currently about 89 million children are anemic [4].

Approximately 50% of anemia cases are caused by iron deficiency. Consumption of foods with low bioavailable iron is likely the primary contributing factor. Before 24 months of age, rapid growth & late weaning places children at the highest risk. Around the world, Iron Deficiency Anemia [IDA] affects approximately 750 million children [5]. Risk factors for IDA are Race/ethnicity, Low socioeconomic status, Prematurity & low birth weight, Excessive milk intake, Early introduction of whole cow's milk, Prolonged bottle feeding, Prolonged exclusive breastfeeding, Overweight & obesity, Non-attendance to daycare & Helicobacter pylori infection. IDA is a systemic condition impairing physical endurance, work capacity, infant growth & development & depressing immune function. Primary prevention of Nutritional anemia includes dietary interventions, including breastfeeding & fortification of formula or infant cereal.

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Non-vegetarian dietary sources of iron are red meat, fish, liver & egg yolks; vegetarian sources include breastmilk, lentils, beans & whole grains. Proper handwashing & periodic deworming should be done to prevent intestinal parasites. Bed nets should be used where malarial mosquitoes are prevalent. Whole milk should not be introduced before 12 months of age. Preterm infants fed human milk should receive an iron supplement of 2 mg/kg/day by 1 month of age until weaned to iron-fortified formula or beginning complementary foods. Integrated Childhood Development Scheme (ICDS) Guidelines for iron supplementation to children 6-24 months of age is to give 1ml of IFA syrup (contains 20 mg elemental iron & 100 micrograms of folic acid) for 100 days in a year.

Secondary prevention is through screening programs. However studies have shown that routine screening for IDA, followed by a therapeutic trial of iron, to be problematic due to low follow-up rates, high spontaneous resolution rate & changing patterns of anemia. In India, the Nutritional Anemia Prophylaxis program is in existence since 1970. In view of high prevalence of anemia among children, the program has been re-designated as the National Nutritional Anemia Control Program in 1991 [6].

National programmes to control & prevent anemia have to be intensified. Experiences from other countries guide to adopt long term measures i.e. fortification of food items like milk, cereal, sugar, salt with iron. Nutrition education to improve dietary intakes in family is important. Nutritional Anemia Control Programme should be comprehensive and incorporate nutrition education through school health to promote regular intake of iron/ folic acid-rich foods and thereby prevent emergence of nutritional anemia.

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