DIETARY IRON INTAKE AND IRON DEFICIENCY ANAEMIA: A CROSS SECTIONAL STUDY OF CHILDREN AGED ONE TO FIVE YEARS IN JAFFNA DISTRICT

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Adequate intake of iron is of great importance for cognitive, growth and immune development of children. The aim was to determine dietary iron intake and association to Iron Deficiency Anaemia (IDA) among children aged 1 to 5 years. A Multistage cluster sampling was used to derive 847 children. Food frequency questionnaire was used to obtain dietary pattern. Blood sample was analysed for haemoglobin (Hb) and ferritin. Data were analysed in Statistical-Package for the Social-Sciences (SPSS)-version 21.0. Among the total children, 48.9% (n414) were males. Mean ($\pm$SD) Hb concentration was 11.7($\pm$1.83)g/dL (in males:11.7 g/dL and in females:11.8 g/dL; p>0.05). The prevalence of anaemia (<11g/dL of Hb) was 36.4%. Mean serum ferritin concentration was 36.5 with ranging from 2.30 to 180.4 ng/mL. Among them, 34.9 % had iron deficiency and 31.7% of them were affected with IDA. Among the anaemic children (n308), 86.4 % (n266) were affected with IDA. Even though the consumption of spinach was high, intake of other leafy vegetables were low among the children [74.9 % of children had Spinach (*Amaranthus gangeticus*) for a day while 9.6, 7.3, 3.5 and 1.4% of children have consumed 'Murunkai'/'Murunga' leaves (*Moringa oleifera*), 'Ponnanganni'/'Mukunuwanna' (*Alternanthera sessilis*), 'Vallarai'/'Gotu kola' (*Centella asiatica*), 'Akaththi'/'Kathurumurunga' (*Sesbania grandiflora*),respectively]. Among the children who had IDA (n266), the mean intake of iron was 10.2 mg/day while average of 16.7mg iron was taken by non-anaemic children per day (RDA=12mg/day). In this study, Hb concentration was significantly increased with the intake of leafy vegetables (R^2=0.301) and food contained iron (R^2=0.245). The mean ($\pm$SD) haem and non-haem iron consumption was 7.0 ($\pm$4.5) and 7.5 ($\pm$6.2) mg/day, respectively (p>0.05). The significant model under forward likelihood ratio-logistic regression was iron deficiency and total dietary intake for IDA. The prevalence of anaemia was significantly high in children of Jaffna District and its major cause is iron deficiency. Under the several associated factors with significant binary logistic model, the casual factor for IDA is lack of dietary iron. The IDA can be minimized in Jaffna District by promoting the intake of iron rich foods.

Keywords: Anaemia, Ferritin, Haemoglobin, Haem iron, Iron deficiency anaemia