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NYEIN NYEIN MAW: EFFECT OF DAILY VERSUS INTERMITTENT IRON SUPPLEMENTATION ON IRON STATUS OF THAI INFANTS. THESIS ADVISORS: PATTANEE WINICHAGOON, Ph.D., EMORN WASANTWISUT, Ph.D., CHUREEPORN CHITCHUMROONCHOCKCHAI, M.Sc., NIPA ROJROONGWASINKUL, M.Sc., 113 P. ISBN 974-663-028-8

The hypothesis that weekly iron supplementation is equally effective as daily iron supplementation was addressed. Eighty five apparently healthy fullterm, 4-6 month old infants, were randomly assigned to two treatment groups: daily (GD), 41 and weekly (GW) 44. Infants in GD received 10 mg of elemental iron per day and those in GW got 15mg elemental iron per week for 18 weeks. Baseline mean haemoglobin (Hb), packed cell volume (PCV), free erythrocyte protoporphyrin (FEP) and serum ferritin (SF) levels were not statistically different between the two groups. The prevalence of anaemia was 66% in both groups. At the end of supplementation, Hb and PCV significantly increased in both groups but the changes were significantly higher in the daily group. Only daily supplementation improved the FEP and SF. About 40% of the infants in this study have abnormal haemoglobin trait. According to the repeated measure MANOVA results, the weekly supplementation is significantly less effective than the daily supplementation. Initial haemoglobin levels were inversely related to the response. Haemoglobin trait also responded significantly less than normal haemoglobin type in both regimens. However, infants with haemoglobin trait responded well to iron supplementation, 86.7% in GD and 68.1% in GW. The size of response was lower in these infants than those having normal haemoglobin. Nonetheless, both daily and weekly supplementation substantially reduced the prevalence of anaemia. The reduction rates were 92% (GD) and 72% (GW). Lower side effects and higher compliance were detected in the weekly group. Even though, the efficacy is lower, the absorption rate and haemoglobin regeneration efficacy are higher in GW than those of GD, (10.5 vs. 3.74 and 5.15 vs. 1.83). Given the advantages of the weekly supplementation found in this study, it is still worthwhile to explore efficacy of weekly supplementation with a higher dose.