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# HUBUNGAN ANTARA STATUS VITAMIN A DAN SENG IBU HAMIL DENGAN KEBERHASILAN SUPLEMEN TASI BESI

## ABSTRACT

Iron supplementation programs to overcome anemia during pregnancy have been carried out over a long period of time, however, the results have not been fruitful. While the majority of previous researches were focused on the program management aspect, little attention was given to the biomedical aspects of iron supplementation.

This research was aimed to examine the association between zinc and vitamin A status before iron supplementation and iron status change and hemoglobin level after iron supplementation in pregnant women.

A nested case control study was carried out. A total sample of 70 pregnant women was obtained using consecutive sampling procedures. The exposure variables were zinc and vitamin A status pre iron supplementation. The absolute change of hemoglobin, expected hemoglobin achievement, and the change of iron status assessed by the change of serum transferrin (sTfR) were the dependent variables. Expected hemoglobin achievement was treated as an indicator because the reference used was the hemoglobin change. Iron and Vitamin B12 status, infection, gestational age post iron supplementation and nutrients intake (protein, iron, zinc, vitamin A, vitamin C) during iron supplementation were treated as confounding variables. Odds ratios were calculated in bivariate and multivariate analysis using multiple logistic regression.

The odds ratio (OR) for vitamin A deficiency on an absolute increase of hemoglobin was 1.04 (95%CI: 0.38-2.83). While the odds ratio for vitamin A deficiency on the expected hemoglobin achievement was 4.07 (95%CI: 1.42-11.67), the odds ratio for vitamin A deficiency on sTfR decrease was 2.01 (95%CI: 0.71-5.71). The odds ratio for zinc deficiency on an absolute increase of hemoglobin, expected hemoglobin achievement and sTfR decrease were 6.59 (95%CI: 2.08-20.82), 5.49 (95%CI: 1.62-18.56) and 5.87 (95%CI: 1.53-22.45) respectively. Multivariate analysis revealed that zinc status (OR=3.84) and iron status (OR=5.21) had statistically significant association with the expected hemoglobin achievement. It was also shown that zinc status (OR=8.22) and iron status before iron supplementation (OR=0.15) were significantly associated with iron status improvement.

Zinc and vitamin A deficiencies are risk factors on the failure of iron supplementation.