

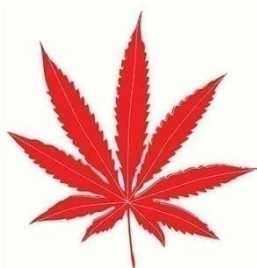


Conference Abstract
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Conference Abstract

SYNERGISTIC EFFECT OF PREBIOTICS AND IRON FORTIFICANTS ON TRANSFERRIN LEVELS AND TOTAL IRON BINDING CAPACITY (TIBC) IN ANEMIC RATS

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ABSTRACT

Background: According to the estimates, approximately 2 billion people of the world suffer from micronutrient deficiencies in one way or the other. Most common micronutrient deficiencies include those of iron, folate, Vitamin A, Vitamin D and zinc. The objective of the current research was to determine the synergistic effect of prebiotics and iron fortificants on Transferrin levels and Total Iron Binding Capacity (TIBC) among anemic rats.

Methodology: : For the current study, n = 126 female Sprague Dawley rats aged 6 to 8 weeks were obtained from the National Institute of Health, Islamabad. Two prebiotics and two iron salts were used in varying dosages to prepare various types of feed to be fed to rats. Initially, anemia was induced among rats by feeding them with carbon tetrachloride which is an iron binder. After that, rats were orally fed with fortified feed daily for a period of three months. Blood samples of overnight fasted rats were collected at 0, 30th, 60th and 90th day of the trials. Serum transferrin levels were determined using the standard procedure. Total Iron Binding Capacity (TIBC) levels were measured using the formula $TIBC = \text{Transferrin} \times 24$. Similarly, Transferrin Saturation Factor was determined using the equation $\text{Serum Iron Concentration} / TIBC \times 100$.

Results: Mean square values for Neutrophils and Lymphocytes showed that a significant association existed for the effect of groups, study intervals as well as their interaction. However, no significant association was witnessed regarding mean square values for

Monocytes, Eosinophils and Basophils The results of the study showed that mean squares for Serum Transferrin, Transferrin Saturation Factor and Total Iron Binding Capacity were significantly different with regards to the effect of groups, study intervals as well as their interaction.

Conclusions: The study concluded that iron and prebiotic fortified feed decreased the levels of serum transferrin and TIBC levels among anemic rats. Moreover, the levels of Transferrin Saturation Factor increased among anemic rats which indicated that anemia was being rectified with the provision of fortified feed.

Key words: Micronutrient Deficiencies, Transferrin, Total Iron Binding Capacity, Prebiotics, Iron fortificants.