S U M M A R Y

SUMMARY

Selenium is an essential trace element in humans and animals. It is a component of the enzyme glutathione peroxidase, which functions as a part of an antioxidant system to protect membranes and essential proteins from the potentially damaging effects of reactive oxygen and lipid peroxides.

The serum selenium concentration is influenced by the amount of selenium ingested, as well as its form and distribution. Therefore, the intake of this element is of particular importance when considering therapeutic diets and parenteral nutrition.

Low levels of blood selenium have been found in association with protein-energy malnutrition in developing countries and during the use of protein-restricted synthetic diets. Also, prolonged deficiency may cause a fatal cardiomyopathy (Keshan disease) and may cause endemic osteoarthropathy (Kaschin-Beck disease).

The aim of this study is to determine the selenium status in malnourished children by detecting its level in blood as well as in human breast milk of their mothers, and correlating between both. A total of 80 samples were included in the present study, classified into four groups:

- Group I: Blood samples from 15 marasmic malnourished infants and 15 samples of breast milk of their mothers.
- Group II: Blood samples from 10 Kwashiorkor malnourished infants.
- Group III: Blood samples from 10 marasmus - Kwashiorkor malnourished infants.
- Group IV: Blood samples from 15 healthy infants as a control and 15 samples from breast milk of their mothers as a control.

In the present study, the mean values of serum levels of selenium were significantly decreased in all groups of malnourished infants, compared to the control group. Also, in this study, the mean values of selenium levels in breast milk were significantly decreased in the marasmic group compared to the control group.

Therefore, it is concluded that the decrease in selenium level in maternal breast milk is accompanied by a decrease of serum selenium in the infant.

RECOMMENDATIONS

The recommended intake of selenium can generally be met by consuming an adequate amount of cereals, meat, eggs, dairy products and human milk, which are good sources of highly available selenium and are of low risk of providing excess amounts of selenium.

In view of the low concentrations of selenium , consideration should be given to the addition of selenium to strict therapeutic diets (in the form of sodium selenite) in the treatment of infants suffering from protein-energy malnutrition.

However, this would require careful studies to prevent selenium toxicity. Suboptimal selenium intakes by women may predispose their infants to low selenium status. So, adequate amounts of food rich in selenium must be given to these mothers.