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ZINC CONCENTRATIONS OF PLASMA, ERYTHROCYTES AND HAIR IN PREGNANT TURKISH WOMEN FROM DIFFERENT SOCIOECONOMIC GROUPS

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Zinc (Zn) is an essential trace element for normal growth and development both in pre and postnatal periods.The biological role of Zn became increasingly important since several enzymes that play a significant part in nucleic acid metabolism are zinc dependent such as DNA and RNA polymerases and thymidine kinase.There is a marked synthesis of new tissue during pregnancy,therefore it is likely that there is greater demand for Zn this time.It has been shown that maternal Zn deficiency may result in intrauterine growth retardation,severe congenital malformations and feto-maternal complications.The purpose of this study was to investigate Zn status in pregnant women from different socioeconomic (SES) and nutritional backgrounds by measuring plasma, erythrocytes and hair zinc concentrations with atomic absorption spectrophotometer. One hundred twenty pregnant women were studied.They were divided into 2 groups on the basis of SES and nutritional status.From the initial number 47 pregnant women were selected as representative of well nourished(WN) and 73 of a poorly nourished group(PN). Sixteen and 37 non pregnant,age matched healthy women were used as controls for blood and hair Zn levels respectively.The plasma Zn levels were significantly low in 73 pregnant women in each trimester when compared with those of controls and WN group.The plasma zinc level was low in the first trimester and remained low throughout pregnancy in PN pregnant women,the lowest levels were observed at third trimester of pregnancy.The erythrocytes Zn concentration showed a different pattern than plasma Zn,the lowest was found at the first trimester and a significant increase was observed at the third trimester in both nutritional groups.The mean hair zinc concentration of WN group did not differ from the mean value of non-pregnant controls.However, a subgroup of 24 PN pregnant village women had significantly low hair levels as compared to both controls and WN counterparts.The findings in the present study suggest that nutrition may be an important factor during pregnancy in Turkish women.