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Research Article

## Determination of Zinc and its association with Hormonal Alterations in Uterine Leiomyomas in Indian Women

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### ABSTRACT

Zinc (Zn) is vital for many biological functions and critical to tissue growth. In the present work, it was sought to investigate the impact of Zn in initiation and progression of uterine leiomyomas (UL) and its possible association with hormonal alterations that occur thereafter. The Zn levels in 148 uterine tissues which includes 98 leiomyoma samples (intramural and subserosal leiomyoma samples) and 50 control samples of premenopausal women aged 20-50 years were analysed by Inductively Coupled Plasma – Atomic Emission Spectroscopy (ICP-AES) method. The blood samples drawn from above subjects were analyzed by Chemiluminescent Microparticle Immunoassay (CMIA) technology to estimate E2 level. The patient categorisation was done on BMI basis which showed a positive relationship with occurrence of disease. The results of analysed samples show significantly higher levels of Zn in the intramural leiomyoma tissues than subserosal leiomyoma and control samples. The statistical results obtained revealed that obese women showed higher Zn and E2 concentration than their counterparts. A positive correlation was found between the E2 level of the subjects and the Zn concentration in tissue samples. A case – control study was conducted to further evaluate the sociodemographic data obtained from patients. The altering levels of Zn identified in the present work may suggest an independent, positive association with risk for clinically detected UL.

**Keywords:** Zinc, uterine leiomyomas, estradiol, ICP-AES, CMIA.

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