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Effect of smoking on serum calcium and phosphorus concentration in 34-45 years old people in Mashhad

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Introduction: Serum calcium and phosphorus are essential biochemical markers in understanding the pathophysiology of bone health that are affected by several factors. In various studies, smoking is related to decreased bone mass and increased risk of osteoporotic fractures;It is not clear this effect whetheris due to serum calcium and phosphorus alteration or not. The purpose of this study is to understand the effect of smoking on serum calcium and phosphorus.
Methods: Serum samples from 430 healthy individuals aged from 34 to 45 years living in Mashhad (217 women and 213 men) were collected from MASHHAD study and calcium and phosphorus were measured.The data on smoking status was assessed by questionnaire. In order to investigation of association between smoking and serum calcium and phosphorus, the samples were classified into three groupsincluding 107current smokers, 25 ex-smokers, and 298 non-smokers (whom never smoked).
Results: No significant association was found between smoking and serum calcium among groups. But in men, significant association between serum phosphate levels was found in current smokers and non-smokers. ($P < 0.05$). Although,no differences between serum phosphate levels were observed in male current and ex-smokers.In women, there was no correlation between serum phosphate levels in three groups. No differences were found in serum calcium concentration between smokers (current and ex-smokers) and non-smokers.In men, serum phosphate concentrationis associated between smokers and controls.
Conclusion: Our findings show that there is no association between smoking and serum calcium level; althoughthe changing of Ca/P ratio may occur via the alteration of serum phosphorus concentration.

Keywords: Smoking; Calcium; Phosphorus; Mashhad