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Serum trace elements in active pulmonary tuberculosis patients by atomic absorption spectrophotometer

Memon Z¹, Shah A² and Devrajani B¹

¹Liaquat University of Medical & Health Sciences, Pakistan

²University of Sindh, Pakistan

Background: Tuberculosis (TB) is a curable disease though it is still remains a major public health problem worldwide especially in developing countries. TB ranks as the second leading cause of death throughout the world. Pakistan ranked as fourth in the midst of 22 elevated challenging tuberculosis nations. Trace elements have involved in many biochemical and physiological functions. Poor concentration of trace elements has been resulting clinical outcome.

Objectives: The objective of study was to find out the alteration in serum trace elements levels in active pulmonary tuberculosis patients and was compared it with normal healthy volunteers with no sign and symptoms of TB.

Method: A total of 248 active pulmonary tuberculosis patients were selected from Liaquat University of Medical & Health Sciences, Jamshoro, Sindh, Pakistan, Liaquat University Hospital, Hyderabad, Sindh, Pakistan, Rajputana Hospital, Hyderabad, Sindh, Pakistan and Institute of Chest Diseases, kotri, Sindh, Pakistan. The subjects were recruited from both genders with same age group 20-70 of years. Blood samples of active pulmonary tuberculosis patients with sputum smear positive were collected and were compared with healthy control subjects without symptoms of pulmonary tuberculosis. Approval was taken from all hospitals. Informed consent was also taken from each patients and healthy participants. Serum trace element analysis was carried out by flame atomic absorption spectrophotometer (FAAS).

Results: Among 248 active pulmonary tuberculosis patients, 104(42%) was male patients while 144(58%) was female subjects respectively. The interpretation of outcome was made on the basis of reference ranges. In our study we were found that the mean serum zinc, iron and magnesium were significantly low in active pulmonary tuberculosis patients (58.1 mg/dl), (34.2 mg/dl) and (0.6 mg/dl). While mean serum calcium was elevated compare to normal healthy control subjects.

Biography

Zainab Manzoor Memon Ph.D. Research Scholar in Biochemistry. Presently she is working at Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan. She has eight international research publications and presented her research work at national and international conferences. She has attended many academic workshops, symposium and has three years research experience. She has expertise on bio analytical techniques such as AAS, Spectrophotometer, AAA, Ultra Centrifuge Machine, HPLC, Microlab 300 & Chemistry Analyzer. She also has command on statistical software including SPSS and Minitab.

zainabmanzoor81@hotmail.com

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