STUDY OF THE ROLE OF SOME TRACE ELEMENTS IN ACNE VULGARIS

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Abstract: Acne is a common disorder affecting the pilosebaceous unit, clinically characterized by the presence of comedones, inflammatory papules, pustules and sometimes, nodules and cysts arising commonly during adolescence and causing great psychosocial stress. Diet may be an important factor, particularly in mediating the inflammation and oxidative stress of the acne process. Objective of the study is to evaluate and provide an insight about the possible role of some trace elements in the etiopathogenesis and treatment of acne vulgaris. Serum and urine levels of some trace elements namely zinc, selenium, chromium, manganese, lithium and copper were analyzed in the serum and urine samples of 30 patients with acne vulgaris and 10 healthy volunteers served as a control group. Patients were clinically classified into 4 groups, using a simple grading system. Each group was subjected to treatment with zinc tablets for 4 weeks to assess the effect of the drug. Trace element analysis was carried out by using an inductively coupled plasma mass spectrometry (ICP/MS). There was a highly significant decrease in serum and urine level of zinc, lithium and in serum level of chromium. There was a highly significant increase in serum and urine level of manganese and copper in acne patients in comparison to control group. While, there was non-significant difference in serum and urine level of selenium and urine level of chromium in patients compared to controls. There is a disturbance in the element contents and also element–element interdependency in acne patients. These elements may serve as biomarkers for the disease as a prognostic tool and normalization of these elements may serve as a parameter of the efficacy of the treatment.

Keywords: Urine, serum, lithium, zinc, chromium, etiopathogenesis, acne vulgaris