

Determination of changes in serum zinc, copper and selenium levels in covid-19 disease in patients admitted to the intensive care unit and its role in outcome in Imam Khomeini Hospital in Ardabil.

Abstract

Background: Coronavirus infection started in Wuhan, China in late 2019 and early 2020 with a large number of people infected, leading to high mortality. Due to the effects of zinc, selenium and copper on immunological processes and systemic inflammation, a study in this regard is necessary.

Aim: The aim of this study was to determine the changes in serum levels of zinc, copper and selenium in covid-19 disease in patients admitted to the intensive care unit and its role in outcome in Imam Khomeini Hospital in Ardabil.

Materials and Methods: In this Nested Case- Control Study, all patients with severe coronary artery disease admitted to the intensive care unit of Imam Khomeini Hospital in Ardabil were included in the study. On the first day of hospitalization, after obtaining the consent of the patient or with the patient, the demographic variables of the patients were recorded in the relevant information form. Then, 3 cc of venous blood sample was taken from each patient to measure the levels of copper, zinc and selenium and its serum was isolated. Patients in terms of clinical course, response to treatment followed and sampling was repeated on the 5th and 10th day of hospitalization. The results of patients' tests were recorded in the relevant checklist and after collecting information based on statistical methods and using analysis and Data analysis was performed.

Results: Out of 70 patients, 47.1% were male. 31 patients died, 51.6% of whom died were women. The relationship between age and disease outcome was significant and the deceased patients had a higher mean age. Serum selenium and zinc levels on the tenth day of the disease were significantly different in the

group of patients who died and were discharged, and garlic selenium and zinc in the deceased patients showed a significant decrease. A significant decrease in copper was observed in both groups.

Conclusion: There is a significant relationship between serum selenium levels and zinc and death of patients and in deceased patients the serum levels of measured micronutrients of garlic have decreased. Therefore, micronutrients seem to play an important role in the severity and outcome of critically ill patients with Covid 19.

Keywords: Covid 19, Zinc, Selenium, Copper