Influence of Zinc Deficiency and Severe Mucositis in patients undergoing Hematopoietic Stem Cell Transplantation

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BACKGROUND

Mucositis is a complication found in patients undergoing Hematopoietic Stem Cell Transplantation (HSCT). It results in painful debilitating inflammation, vomiting, diarrhea, sleep disturbances, anorexia, weight loss and a decrease in quality of life. Several studies have demonstrated zinc serum levels could associate to mucositis and its degree.

OBJECTIVES

Correlating zinc deficiency with mucositis and/or mucositis degree

METHODS

It was a retrospective study, based on medical records and approved by the institutional ethics committee. We evaluated 117 patients (≥18 years-old) undergoing HSCT, who had zinc serum level evaluated until 5 first days of admission in Hospital Israelita Albert Einstein, São Paulo, Brazil from January 2015 to April 2017. 59 patients were excluded who did not have serum zinc level in this period. None patient has taken zinc supplementation. We analyzed presence or absence and degree of mucositis, age (less or more than 60 years), and the time of neutrophilic grafting, presence or absence GVHD acute or chronic. Categorical variables were described, using SPSS version 17 software®, by absolute and relative frequencies and compared between groups with zinc serum levels normal (60-130 mg/dL) or low (<60 mg/dL) by means of chi-square, Pearson test, independent sample t-test and Mann-Whitney test.

RESULTS

We analyzed 30 patients were undergone allogenic HSCT, everyone treated myeloablative conditioning. We found a tendency the elderly population (≥ 60y) had more deficiency of zinc (p=0,072). 93% patients had mucositis. Severe mucositis (grades 3 and 4) was related to zinc deficiency (p=0,01). 28 patients were undergone autologous HSCT, 80% with mucositis, 72% had oral mucositis grade I/II. We didn’t find any significant result in GVHD and neutrophilic grafting in autologous an allogenic HSCT.

CONCLUSION

We found severe mucositis is associated to zinc deficiency in allogenic HSCT.