

Melphalan Impacts Temporarily on Pancreatic Enzymes

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Multiple myeloma is a malignant disease caused by monoclonal proliferation of multiple myeloma plasma cells [1]. In patients, high-dose melphalan chemotherapy and autologous stem cell transplantation are administered. Common side effects of high dose melphalan are oral mucositis, enteritis, and neutropenia [2].

Keywords: Melphalan; Amylase; Lipase; Multipl Miyeloma

A 69-year-old male with a diagnosis of multiple myeloma was hospitalized for autologous stem cell transplantation. He had a history of polyneuropathy. There was no pathological finding on physical examination. In past medical history; alcohol consumption, hyperlipidemia and pancreatitis was not present. In laboratory findings; ALT (Alanine aminotransferase): 17 Unit/Litres (0-50), AST (Aspartate aminotransferase): 19 U/L (0-50), Amylase: 82 U/L (28-100), Lipase: 12 U/L (0-67). The patient was administered 200 mg/m² (375 mg) of melphalan. The laboratory results of the patient who had no active complaints other than vomiting after melphalan were; Amylase:134 U/L, Lipase: 158U/L, ALT: 23 U/L, AST: 23 U/L. Although he did not have abdominal pain, defensiveness and rebound in the abdomen on physical examination, amylase and lipase were significantly elevated after high dose melphalan therapy. Before autologous stem cell transplantation, the laboratory results of the patient were; Amylase: 652 U/L, Lipase: 1424 U/L, ALT: 17 U/L, AST: 20 U/L, ALP: 57 U/L. In Magnetic resonance cholangiopancreatography: With of the lumen of Intra and extrahepatic bile ducts were normal size until the common bile duct. Fatty atrophic changes were seen in the pancreas. Ringer Lactate infusion was initiated in the patient who was not considered to have acute pancreatitis. Amylase levels, which were observed on the 1st, 2nd, 3rd and 4th days after stem cell transplantation, were 236 U/L, 100 U/L, 94 U/L, 79 U/L respectively. Similarly, the decrease in lipase levels was also observed on the 1st, 2nd, 3rd and 4th days after stem cell transplantation, were 418 U/L, 182 U/L, 114 U/L, 38 U/L respectively. It was observed that the patient's amylase and lipase levels increased rapidly after Melphalan.

For the last 30 years, high-dose melphalan treatment has been administered before autologous stem cell transplantation in patients with multipl myeloma. While high dose melphalan regimen often causes hemotological toxicity such as anemia and pancytopenia; Severe mucositis in the gastrointestinal tract has been associated with diarrhea and vomiting [3,4]. In the study conducted by Ahmer M. Hameed et al., the causes of the elevation of amylase and lipase levels were mentioned in the patients without diagnosis of pancreatitis. Renal failure, macrolipase disease, diseases of hepatobiliary tractus, diabetes, sarcoidosis and gastrointestinal diseases were shown as the causes of elevated amylase and lipase levels [5]. In this report, it was aimed to emphasize that, amylase and lipase elevation after melphalan treatment can be observed temporarily.

Conclusion

In conclusion, this is the first case of increase in amylase and lipase levels developing after high dose melphalan treatment to be reported in the literature. Clinicians should be aware of this uncommon adverse effect of melphalan.

Informed Consent

A consent form was completed by participant.

Authorship Contributions

Data Collection or Processing: K.K., N.K., İ.A; Analysis or Interpretation: K.K., N.K., İ.A.; Literature Search: K.K., N.K., İ.A.; Writing: K.K, N.K

Conflict of Interest

The authors of this paper have no conflicts of interest, including specific financial interests, relationships, and/or affiliations relevant to the subject matter or materials included.

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