Changes in Plasma Gastrointestinal Peptide Levels After Platinum-Based Chemotherapy in Esophageal Cancer Patients

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Purpose: Platinum-based chemotherapy is widely recognized to cause severe gastrointestinal disorders. The aim of this study was to assess the plasma gastrointestinal peptide levels and their association with appetite during chemotherapy in patients with esophageal cancer.

Methods: Five patients with esophageal cancer who underwent platinum-based chemotherapy were enrolled in this study. Plasma gastrointestinal peptides (Acylated ghrelin, Desacyl-ghrelin, leptin, motilin, and substance P) levels and platinum concentrations were measured before and at day 3, 8, and 28 after chemotherapy. Appetite profile was evaluated by visual analog scale (VAS).

Results: Plasma acylated ghrelin and substance P were significantly decreased at day 8 of chemotherapy but recovered at day 28. No changes were noted in plasma desacyl-ghrelin, leptin, and motilin. VAS score of appetite was significantly decreased at day 8. There was significantly correlation between plasma acylated ghrelin/total ghrelin levels ratio (A/T ratio) and VAS score, and between plasma substance P levels and VAS score.

Conclusion: Platinum-based chemotherapy significantly reduced plasma ghrelin and feeding activity. The A/T ratio and substance P levels in plasma might be good indicators of the expression of the gastrointestinal disorders by platinum-based chemotherapy in esophageal cancer patients.

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