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Prognostic nutritional index and C-reactive protein levels predict survival in patients with advanced head and neck cancer treated with induction chemotherapy

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Abstract

Induction chemotherapy (IC) with docetaxel, cisplatin, and 5-FU (TPF) has been shown to improve the outcomes of patients with advanced head and neck cancer (HNC) without compromising compliance. However, since these studies were commonly conducted in discreetly selected patients, we aimed to identify the prognostic factors of tolerance and survival in unselected HNC patients treated with TPF-IC.

Methods: We retrospectively analyzed the data of 113 patients with HNC who underwent TPF-IC at our institution between January 2008 and December 2016. IC comprised 1–3 courses of docetaxel (60 mg/m²), cisplatin (70 mg/m²), and 5-fluorouracil (750 mg/m²) every 3–4 weeks. Further, local therapy was performed following IC, including surgery, radiotherapy, chemoradiotherapy, or bio-radiotherapy. The prognostic factors were identified using the cox-proportional hazard model, and the analyzed variables included patient age, body mass index, tumor T-stage, the pre-treatment level of C-reactive protein, albumin, and lymphocytes. We also evaluated the modified Glasgow prognostic score (mGPS), which reflects the degree of tumor-associated inflammation and cancer cachexia, and the prognostic nutritional index (PNI), which is based on serum albumin concentration and peripheral blood lymphocyte count.

Results: The median patient age was 65 (range, 18–83) years. Performance status was 0 or 1. Grade 3/4 toxicities during TPF-IC were reported in 99% of the patients, including 62% febrile neutropenia and 3% kidney failure. Based on mGPS, 14% (n = 16) of the patients were classified as cancer cachexia and 8.8% (n = 10) indicated low PNI. For five-year overall survival, the two most significant independent prognostic factors were mGPS and PNI. There were three treatment-related deaths that were classified as cancer cachexia and indicated low PNI.

Conclusions: In patients with advanced HNC treated by TPF-IC, mGPS and PNI are the potential prognostic indicators of lower tolerance and overall survival.

Biography

Dr. Kei Ashizawa is currently working as Assistant Professor in Department of Otorhinolaryngology at University of Yamanashi, Japan. His main research interests are mass spectrometry-based diagnosis of head & neck tumor. Dr. Kei Ashizawa has published more than 25 publications in international peer reviewed journals.

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