Mean Corpuscular Volume as a Prognostic Factor for Head and Neck Cancer

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Background

Pretreatment elevated mean corpuscular volume (MCV) was shown to be an independent risk factor for patients with esophageal squamous cell carcinoma. To the best of our knowledge, no data exists on the prognostic value of MCV for head and neck cancer.

Objective

The objective of this study was to elucidate the relationship between pretreatment elevated MCV and prognosis of patients with head and neck cancer who underwent chemoradiotherapy.

Methods

We assessed patients with oropharyngeal, hypopharyngeal, and laryngeal squamous cell carcinoma who underwent chemoradiotherapy in our department between 2003 and 2012 and performed a retrospective analysis. Table 1 shows inclusion and exclusion criteria. This study included 301 eligible patients. Patients characteristics were shown in table 2.

Patients were divided into two groups according to their MCV. The cut-off value for MCV was calculated by a receiver operating characteristic curve. The primary endpoint of this study was overall survival rate.

Results

Fig. 1 shows distribution of pretreatment MCV of all patients. The optimal cut-off value for MCV was 98.6 fL. Of all patients, 86 (29%) had high MCV (≥98.6 fL) and 215 (71%) had normal MCV (<98.6 fL). There was a significant difference in overall survival rate between the normal MCV and high MCV groups (Fig. 2). There was also a significant difference in disease specific survival rate (Fig. 3).

Univariate analysis showed that tumor site, cStage, and MCV were significantly correlated with overall survival. The subsequent multivariate analysis, which included five variables with p value < 0.2 in univariate analysis showed that cStage and MCV were significant correlated with overall survival (Table 3).

Conclusions

Pretreatment elevated MCV predicted a worse survival outcome for patients with head and neck cancer who were underwent chemoradiotherapy.

1) Yoshida N et al. Ann surg. 2018