Abstract

Prognostic factors for survival in Osteosarcoma: Rajavithi Hospital Experience

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Objective: To determine the survival of patients with osteosarcoma and investigate their influence on the prognosis of patients presenting this disease.

Method: This retrospective study was conducted by reviewing 115 files of osteosarcoma patients who treated in the Oncology Unit, Department of Medicine, Rajavithi Hospital from January 1st 1996 to December 31st 2009. Fifteen variables were investigated through univariate and multivariate analyses as prognostic factors for survival.

Results: With a median follow up 26.0 months, the 1, 3 and 5-year overall survival rate for patients with osteosarcoma were 78%, 47% and 33% respectively. Extremities were primary tumor site in 100 patients (87%). Seventy four patients (64%) presented with localized disease. The median survival for patients with localized disease and metastatic disease were 51.2 and 12.6 months, respectively ($p<0.001$). Univariate analysis showed ECOG performance status 0-1 ($p = 0.012$), T1 ($p=0.008$), localized disease at diagnosis ($p<0.001$), receiving surgery ($p<0.001$) and multimodality treatment ($p<0.001$) were good prognostic factors for survival. Multivariate analysis revealed ECOG performance status $>1$ (HR = 3.52, 95% CI 1.38-8.97; $p = 0.008$), presence of pathological fracture (HR = 4.73, 95% CI 1.66-13.45; $p = 0.004$), axial tumor site (HR = 3.25, 95% CI 1.12-9.38; $p = 0.030$), presence of metastatic disease at diagnosis (HR = 28.98, 95% CI 8.78-95.66; $p < 0.001$), high serum LDH level (HR = 6.26, 95% CI 1.33-29.77; $p = 0.021$) and treatment with incomplete courses of chemotherapy (HR = 10.19, 95% CI 3.66-28.39; $p<0.001$) were poor prognostic factors for survival.

Conclusion: Patients with poor prognostic factors including pathological fracture, primary tumor at axial site, metastatic disease at diagnosis, high serum LDH and had good performance status should be treated with intensive treatment and supportive care in order to complete treatment plan.