

Influence of Histological Response in Survival of Localized Osteosarcoma of The Extremity

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INTRODUCTION:

Osteosarcoma is the most common malignant bone tumor with hematogenous spread to distant sites, especially the lung. Microscopic tumor necrosis following neoadjuvant chemotherapy is established as independent variable to predict the survival of osteosarcoma. This study is aimed to evaluate the chemotherapy histological response in all localized non-metastatic osteosarcoma for survival evaluation and cure rate in our center for general comparison outcome with other established center.

MATERIALS & METHODS:

We reviewed 60 localized non-metastatic osteosarcoma patients that completed their treatment from 2002 to 2017. Tumor response to neoadjuvant chemotherapy were graded as described previously by Huvos et al. and their survival were plotted on Kaplan-Mier graph.

RESULTS:

Patients with good histological response reported a higher overall survival (OS) rate, 72.7%, compared to 59.3% for poor responders. The disease-free survival (DFS) rate for good and poor responders was 63.6% and 51.9%, respectively. However, no statistically significant difference in 5-year OS and DFS between the two groups of histological response.

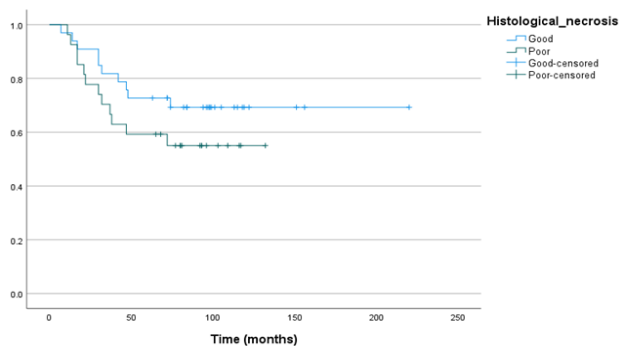


Figure 1: The Kaplan-Meier graph of OS based on histological response ($P=0.271$)

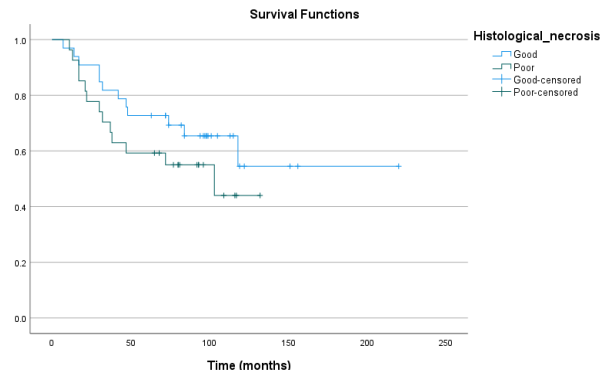


Figure 2: The Kaplan-Meier graph of DFS based on histological response ($P=0.357$)

DISCUSSIONS:

Non-metastatic high-grade osteosarcoma of the extremities is a disease that remains incurable in up to 30% of patients despite continuous efforts to improve the outcome. Early pulmonary metastasis and local recurrence had shown in multiple study to be an independent factor for poor survival of osteosarcoma. Histological response to chemotherapy had positive influence on survival after both the factors are taken into account.

CONCLUSION:

Localized osteosarcoma patients treated in our center from 2002 to 2017 had a 5year overall survival (OS) and disease-free survival (DFS) of 66.7% and 58.3% respectively. These findings are comparable with the survival rates in other centers in developed countries. Patients with good histological response to chemotherapy had better OS and DFS rate compared to those who responded poorly.

REFERENCES:

1. Faisham, Wan Ismail, et al. "Prognostic factors and survival rate of osteosarcoma: a single-institution study." *Asia-Pacific Journal of Clinical Oncology* 13.2 (2017): e104-e110.