No survival benefit of adding methotrexate for localized osteosarcoma in adult

Panuch Eiamprapaporn¹, Aumkhae Sookprasert ¹, Kosin Wirasorn1, Piti Ungareevittaya ², Jarin Chindaprasirt ¹

¹ Medical oncology unit, Faculty of medicine, Khon Kaen University, Khon Kaen, Thailand
² Department of pathology, Faculty of medicine, Khon Kaen University, Khon Kaen, Thailand

Background: Osteosarcoma is the most common primary bone cancer in young adults. The standard treatment for localized disease is surgery and chemotherapy with MAP (Methotrexate, Adriamycin, and Cisplatin) regimen. However, the benefit of adding methotrexate is unclear.

Objectives: To compare survival benefit between MAP and AP regimen in localized osteosarcoma.

Methods: Clinical data of patients aged > 15 years diagnosed with osteosarcoma between January 2000 and December 2015 at Srinagarind Hospital, Khon Kaen University were retrospectively reviewed. Treatment modality and outcomes were obtained.

Results: A total of 114 patients (M: F=74:40) were enrolled. The median age at diagnosis was 19 years old (range 15-70) and the most common primary site was a distal femur. The median survival time of the overall cohort was 37.5 months (95% CI: 27.4-60.8). There was no survival benefit of MAP over AP regimen (HR 1.22, 95%CI 0.62-2.39, p=0.57). Multivariate analysis showed that patients older than 65 years old (adjusted hazard ratio) and no definitive surgery (HR13.65; 95% CI 1.43-129.83; p= 0.023) were significantly associated with worse overall survival.

Conclusions: In neoadjuvant setting osteosarcoma, the MAP regimen did not show superior efficacy to the AP regimen in terms of overall survival.

Keywords: Osteosarcoma, Adult, Methotrexate, Neoadjuvant, Chemotherapy