

**PP-135****Renal dysfunction following chemotherapy for osteosarcoma****K. Takeda**, T. Kunisada, K. Uotani, K. Sugiu, T. Uehara, T. Omori, O. Toshifumi, Ozaki*Department of Orthopaedic Surgery, Okayama University Hospital, Okayama, Japan*

Introduction: Systemic chemotherapy improved the survival of patients with osteosarcoma over the last decades, but late side effects of chemotherapy have become important problems. The aim of this study was to evaluate the renal toxicity of chemotherapy in osteosarcoma patients in our institution.

Methods: Among the patients of osteosarcoma treated in our institute from 1993 to 2011, there were 70 patients who received chemotherapy (mean age at diagnosis: 23 years). We retrospectively investigated these 70 patients for renal toxicity. Mean follow-up period was 83 months. We performed standard national chemotherapy protocol using methotrexate, cisplatin, and doxorubicin, with or without ifosfamide. Fifty-one patients were treated with regimens using ifosfamide. Renal dysfunction was defined as increasing serum creatinine levels (beyond the normal limit) identified more than 1 week.

Results: Renal dysfunction was identified in 18 patients (26%), 14 of those (20%) developed renal dysfunction during chemotherapy, and 4 patients (6%) developed mean 78 months after the complete treatment. At the final follow-up, 13 patients (19%) showed chronic renal dysfunction, and 5 patients (7%) recovered. There were no patients who underwent the chronic kidney dialysis. All patients with chronic renal dysfunction had received protocol using ifosfamide. The incidence of chronic renal dysfunction at the final follow up was significantly higher in patients treated with ifosfamide (26%) compared than those without ifosfamide (0%) ($p=0.0143$).

Conclusions: Chronic renal dysfunction due to chemotherapy was found in 19% of osteosarcoma patients. In our country, chemotherapy for osteosarcoma patients have been traditionally performed mainly by orthopaedic surgeons. We orthopaedic surgeons might have tendency to check the postoperative limb function and local relapse or distant metastasis of tumor. The awareness of late side effects in long-term survivors of osteosarcoma should emphasize the importance of longer follow-up of blood chemistry study and urine analysis in addition to imaging study for detecting local relapse and distant metastasis. Ifosfamide could be one of important chemotherapeutic drugs, although the impact of ifosfamide on the prognosis has not been identified. Despite these side effects, the ongoing randomized study would hopefully validate the adding of ifosfamide to improve the prognosis of osteosarcoma patients.