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Non-metastatic osteosarcoma of the extremity. Neoadjuvant chemotherapy with methotrexate, cisplatin, doxorubicin and ifosfamide. An Italian Sarcoma Group survey.

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Background: According to the results of the ISG/OS-1 study (April 2001-December 2006), the neoadjuvant regimen MAP (Methotrexate (MTX), doxorubicin (ADM), cisplatin (CDP), and ifosfamide (IFO) postoperatively added in poor responder patients, was recommended for patients with non metastatic osteosarcoma of the extremity treated in the ISG centers.

Patients and Methods: The data of patients with non metastatic osteosarcoma of the extremity, aged ≤ 40 years, treated in the ISG centers, were prospectively collected in the ISG WEBSITE database.

Compared to ISG/OS-1 (cumulative doses: ADM 420mg/m², MTX 120g/m², CDP 600 mg/m², IFO 30g/m²) the recommended regimen foresaw a reduction of the courses of MTX from 10 to 5 for a cumulative MTX dose of 60g/m².

Results: From January 2007 to June 2011, TOT patients (median age was 16 years (from 4 to 40), male TOT%) were registered. TOT (%) patients underwent limb-salvage surgery. Chemotherapy-induced necrosis was good (≥90%) in 48% of patients. No treatment-related deaths were recorded. With a median follow-up of 39 months (4-80), 5-year OS was 80 % (95% CI, 73 to 87%) and EFS was 50% (95% CI, 39 to 59%). In ISG/OS-1 the rate of limb salvage and good histological response were 92% and 48% respectively. 5-year OS was 73% (95% CI, 65-81%) and EFS was 64% (95% CI, 56-73%).

Conclusions: While the response rate and the limb salvage rate recorded in the survey are in the same range of the previous study, the percentage of EFS is lower than that expected. This difference might be due to the observational characteristics of the survey, but we cannot exclude a possible role played by the reduction of the cumulative dose of MTX.

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