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abstract

The Role of Multidisciplinary Approaches in Improving the Diagnosis and Treatment of Osteosarcoma in Children in the Republic of Uzbekistan

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Introduction: Osteosarcoma (OS) accounts for 15% of all malignant bone tumors and 2% of malignant neoplasms in children, with global incidence rates averaging 3–4 cases per million population per year. In the Republic of Uzbekistan, OS incidence is estimated at 2.8–3.2 cases per million population, which is comparable to global data.

Objective: To evaluate the significance of multidisciplinary approaches in improving the diagnosis and treatment of osteosarcoma in children in the Republic of Uzbekistan.

Materials and Methodology: A retrospective analysis of 152 cases of OS in children aged 6 to 18 years was conducted. These cases were registered at major oncology centers in Uzbekistan and the Scientific and Practical Center for Pediatric Oncology, Hematology, and Immunology between 2018 and 2023. Data on age and gender distribution, diagnostic timelines, treatment Methodology: survival rates, and complications were assessed.

Results: The average age of the patients was 14.5 ± 2.3 years, with a male-to-female ratio of 1.4:1. In 72% of cases, the tumor was localized in long tubular bones, predominantly in the distal femur. The diagnostic delay averaged 4.7 months, largely due to limited access to high-precision diagnostic Methodology: (MRI was available in only 30% of regional centers). Neoadjuvant chemotherapy using the MAP regimen (methotrexate, doxorubicin, cisplatin) was administered to 85.5% (130/152) of patients. However, treatment was completed in only 64.4% (98/152) of cases due to toxicity and a lack of medications. Limb-sparing surgeries were performed in 28% (43/152) of patients, while 63.8% (97/152) underwent amputations. Patients treated under the supervision of multidisciplinary teams showed higher 3-year survival rates. The overall 5-year survival rate was 47%, which is lower than global averages (60–70%).

Conclusion: The proper implementation of multidisciplinary approaches in the diagnosis and treatment of osteosarcoma in children in the Republic of Uzbekistan can serve as an effective tool for improving clinical outcomes.