ACUTE MYELOID LEUKEMIA AFTER OSTEOSARCOMA IN A 19 YEAR OLD PATIENT: CASE REPORT.

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Abstract. Introduction. As patients with osteosarcoma become long-term survivors, increasing attention has turned to the burden of late effects. Recent studies showed an increase in the incidence of secondary malignant neoplasms in patients with osteosarcoma compared with the general population. The risk of developing leukemia was reported to be in an increasing rate in last decade Case report. In this report we present the case of a 19 year old patient admitted in the Hematology Department of Colentina Clinical Hospital in February 2015 for fever (38°C), extreme fatigue, intense pallor. The patient reported that he had been diagnosed with osteogenic osteosarcoma of the right femur 2 years ago which was operated and treated with chemotherapy (COSS EURAMOS protocol) and radiotherapy, achieving complete remission. The full blood count performed at admission revealed severe anemia, thrombocytopenia and leukocytosis and the blood smear revealed the presence of myeloblasts in proportion of 97%. The bone marrow aspirate showed a percentage of 95% blasts with the morphological characteristics of myeloid lineage, with the dislocation of normal hematopoiesis. The flow cytometry performed on the bone marrow aspirate stated the diagnosis of Acute Myeloid Leukemia M1 FAB subtype (WHO 2008). The cytogenetics revealed an abnormal karyotype with 91 chromosomes (XXY). The molecular biology did not find mutations in the FLT3ITD, FLT3D835 and NPM1 A genes. The patient started the first course of induction therapy with Cytarabine 5 days and Anthracicline 2 days (the calculated total dose of anthracicline used for treating the osteosarcoma permitted us to further administer anthracicline this time as well) and the bone marrow aspirate performed at day 21 revealed a percentage of blasts of 4%, this being interpreted as complete remission. Next the patient underwent a first consolidation course of chemotherapy with high dose Cytarabine followed by a severe post chemotherapy aplasia. The bone marrow aspirate performed after this course revealed a percentage of 3% blasts, showing that the patient is in sustained complete remission.

Considering the prior treatment for the osteosarcoma consisting of radiotherapy and chemotherapy we considered this to be a secondary Acute Myeloid Leukemia, this representing a major negative prognostic factor, along with the cytogenetic abnormalities found. These factors strongly indicate that the first complete remission should be consolidated by allogeneic stem cell transplant. To be noted that the patient has a sibling which is not HLA compatible, but efforts are being done to find a suitable unrelated donor. Conclusion. The particularities of this case are the association of the two malignancies in a young patient, the presence of the abnormal karyotype (hyperploid), and also the good response of the patient to the induction therapy, achieving complete remission after the first induction course, and of course, sustaining that response.