AZACYTIDINE (A) ASSOCIATED WITH VITAMINS (B1, C, AND D) IN THE TREATMENT OF ACUTE MYELOID LEUKEMIA.

R Conserva, VM Sthel, VLP Figueiredo

Serviço de Hematologia, Hospital do Servidor Público do Estado de São Paulo (HSPE), Instituto de Assistência Médica ao Servidor Público Estadual (IAMSPE), São Paulo, Brazil

Objective: To report the clinical evolution of AML with complex karyotype in an elderly individual using the AZAVIT-ABCDEF protocol. **Method:** Information was obtained through electronic medical record review (HSPE–IAMSPE-SP). **Introduction:** The cellular proliferation that occurs in AMLs requires significant energy access. Warburg described in 1956 that neoplastic cells, even in the presence of O2, utilize anaerobic metabolism. Improving the use of aerobic pathways with high doses of vitamins may favor the differentiation of hematopoietic cells. The AZAVIT-ABCDEF protocol (AZACYTIDINE 75 mg/m^2 subcutaneously for 7 days associated with high intravenous doses of Vitamins B1 (15-20 mg/kg every 12/12 hours), C (300 - 400 mg/kg intravenously every 12/12 hours), calcitriol 0.25 mcg orally every 6/6 hours, erythropoietin 10,000 IU subcutaneously once a day, and filgrastim 5-10 mcg/kg subcutaneously once a day) in a 28/28-day cycle. Between cycles, oral use includes Vitamin C 2 g every 8/8 hours, Benfotiamine 150 mg every 12/12 hours, Vitamin D 50,000 IU once a day until levels reach 80-100 ng/mL, and Famotidine 40 mg every 12/12 hours - (Plataforma Brasil CAAE: 53015421.0.0000.5463). After obtaining informed consent. **Case report:** Male 80-year-old in NOV/22 presented with anemic syndrome, Hb = 5.5 g/dL; Leukocytes = 3719/mm^3 (20/11/0/55/14); Platelets = 38,000/mm^3. Bone marrow: 30% blasts with phenotype: CD10, CD13, CD33, CD34, CD38, CD71, CD117, CD123, HLA-DR, and MPO. Karyotype: 45 XY add (3) (q21), del5, add(7) (p11.2), -9, der (12)t(1214) (p11.2q11.2), -14, +2mar [17] /46, XY [4]. FISH: Deletion of Chromosome 5 in 130/200 metaphases. He received 4 cycles of the protocol. Progressed with Hemogram: Hb = 14.1 g/dL; leukocytes = 13,670/mm^3 (neutrophils = 10,130) and platelets = 273,000/mm^3. Bone marrow: Hypercellular and normomaturative with negative minimal residual disease. Karyotype: 46, XY [20] and FISH: normal. As of August 2023, he is on the 8th cycle with stable hemogram. **Discussion:** Vitamins are closely linked to the Krebs cycle, not providing energy but releasing it through intense redox mechanisms. This may contribute to better epigenetic regulation of primitive hematopoietic cells. Genes linked to epigenetics: DNMT3A, TET2, ASXL1, IDH1, and IDH2 are frequently mutated in AML and are considered important for directly or indirectly leading to DNA methylation. Azacytidine: inhibits DNMT3A and promotes cell differentiation. Vitamin: An effective guardian of aerobic metabolism, serving as a cofactor for pyruvate dehydrogenase complex (PDHC), the enzyme allowing pyruvate to enter the Krebs cycle. It also acts on alpha-ketoglutarate metabolism, reducing 2-Hydroxyglutarate (2-HG) formation and DNA methylation. Vitamin C: Cofactor of TET2 gene in DNA demethylation. Vitamin D: Binds to VDR, which heterodimerizes with retinoid-X receptor (RXR) within the cell nucleus, serving as a transcription factor for numerous target genes. **Conclusions:** The patient exhibited an excellent response, and the AZAVIT-ABCDEF protocol should be studied in a prospective cohort to better define its role in treating AML in patients without performance status for intensive treatment. The main objective is to reduce transfusion dependence and extend survival in this population.

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MYELOID ACUTE LEUKEMIA WITH INCREASED BASOPHILIC CELLS AND HISTAMINE RELEASE EPISODES

JOR Cassiano, ASH Gallotti, ACP Silva, NN Kloster, CM Freitas, MM Garcia, VM Sthel, VLP Figueiredo

Serviço de Hematologia, Hospital do Servidor Público do Estado de São Paulo (HSPE), Instituto de Assistência Médica ao Servidor Público Estadual (IAMSPE), São Paulo, Brazil

Objective: Reporting a case of a patient with Acute Myeloid Leukemia (AML) and increased basophils and episodes of histamine release. **Methods:** Data collection in HSPE's digital system. **Case report:** A 58-year-old woman, addicted, ex-smoker and ex-alcoholic complaining of fatigue, headache, visual scotomas and loss of 30 kgs who on physical examination showed dyspnea, splenomegaly and signs of retinal leukostasis. Hemoglobin 6.4 g/dL, leukocytes 312,870/mm^3 (5% blasts) and platelets 186,000/mm^3, LDH 4,317 U/L and uric acid 15 mg/dL. Myelogram: 21% blasts, some with metachromatic granules and 9% basophils. Normal karyotype and FISH. There was no description of basophils in immunophenotyping (IPP). It was not possible to measure serum tryptase and the PCR for BCR-ABL was negative. She had hydroxyurea and 1 session of leukapheresis. Ten days after discontinuation of the antimetabolite due to leukopenia, the patient presented with hypotension and dyspnea, responsive to volume expansion, corticosteroid therapy and broad-spectrum antibiotic therapy. Without performance status for an intensive chemotherapy regimen due to chronic obstructive pulmonary disease and karnofsky= 60%, the AZAVIT-ABCDEF protocol (azacitidine associated with erythropoietin, filgrastim with high doses of vitamins B1, C and D3) was chosen, after signing a consent form - CAAE 53015421000005463. She was discharged and returned in 15 days with leukocytosis. Cytoreduction with hydroxyurea was reinitiated. A new medullary evaluation and IPP with a panel to study basophils showed increased immature basophils. There was a drop in leucometry and 5 days after its suspension, in the absence of neutropenia, she presented with dyspnea, cough, desaturation and hypotension, responsive to volume resuscitation, corticotherapy and diphenhydramine. There was no infectious focus and cultures were negative. After this second episode, the patient is on continuously use of H1 and H2 antihistamines. She is still undergoing treatment for AML, however, the protocol has been changed for azacitidine and venetoclax, for 7 days every 28 days, due to the increase in blasts in peripheral blood. She has had 2 cycles and is now in complete remission.