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Objetivo: Relatar um caso de SMD após tratamento quimioterápico, conforme previsto na atual classificação OMS, com alterações no cariótipo e remissão dos clones linfoides, surgimento de citopenias, tratamento e recuperação com independência transfusional. **ECLS**, 69, F, natural de SP, admitida em nosso serviço em Janeiro de 2019, com perda ponderal maio que 10Kg, febre e sudorese noturna, apresentou o perfil imuno histoquímico associado aos achados morfológicos compatível com o diagnóstico de DLGCB: CD20+;CD3 -; KI67+, BCL-2+,CD5+,PAX5+,CD15-;CD3-, CD10-,MUM1+, perfil de células ativadas (CD5+) EC IV B (Infiltração medular) e múltiplas linfonodomegalias supra e infra-abdominais, cariótipo 46,XX[20]. Iniciou-se o 1° tratamento RCHOP por 6 ciclos em 22/05/19 e o 6°ciclo em 16/09/19. Após término do tratamento, foi feito PETSCAN (31/01/20) que demonstrou manutenção de doença em atividade e nova biopsia ganglionar, revelou-se a presença de Linfoma Linfocítico de Pequenas Células B neste momento realizou-se também o estudo citogenético o qual revelou 46,XX[20]. Como paciente não possuía comorbidades dignas de nota e protocolo disponível era baseado em quimioimunoterapia, a paciente recebeu 5 ciclos do protocolo de quimioterapia FCR, o 1°ciclo de FCR foi realizado em 18/02/20 e 5°ciclo de FCR em 06/07/20. A paciente não pôde receber o 6°ciclo deste protocolo por ter evoluído com neutropenia e plaquetopenia Grau IV. Após fim do tratamento, paciente mantinha-se em resposta completa e assintomática em relação ao Linfoma Linfocítico de Pequenas Células B, porém, a pancitopenia se tornou prolongada. Paciente seguiu acompanhada em ambulatório, foram realizadas investigações medulares, cariótipo normal, exames laboratoriais, transfusões de plaquetas e hemácias e início ao tratamento de suporte com alfaepoetina e filgrastima, semanalmente, resultando na melhora dos índices de anemia e da neutropenia. Realizou-se PETSCAN (20/10/21): alterações osteodegenerativas na coluna vertebral, mas não observadas áreas de aumento anormal do metabolismo que possam sugerir doença linfoproliferativa em atividade. Como paciente mantinha citopenias, principalmente neutropenia, foi iniciada terapia com eltrombopague olamina) na dose de 50mg como melhora das citopenias e foi possível atingir a independência transfusional. Maio de 2022 realizou-se novo carío-tipo que revelou alteração clonal em 25% das metáfases analisadas: 46,XX,der(5)del(5)(q31)t(5;7)(q31;q22)[5]/46,XX[15]. **Conclusão:** A SMD após agentes alquilantes e análogos da purina é uma situação muito conhecida em amplamente descrita na literatura médica. Nesta descrição de caso clínico foi possível verificar essa complicação após constarmos a presença de dois clones de neoplasia linfoproliferatia, apesar de terem tido excelente quimiossensibilidade, foram capazes de ocasiona danos ao DNA e alterações citogenéticas típicas para SMD. Agonistas da trombopoietina constituem uma classe de fármacos já com sabida resposta satisfatótia a condições autoimunes, tais como a púrpura trombocitopênica idiopática e a para anemia aplásica em pacientes não elegíveis ao TMO alogênico. Neste caso específico, a paciente chegou a apresentar neutropenia grave e plaquetopenia severa e, hoje, já está independente do ponto de vista transfusional apesar de não ter tido resposta hematológica completa. Em relação ao cariótipo sugere-se repetir o exame oportunamente para acompanhar remissão do clone ou surgimento de novos clones e melhor direcionamento da abordagem terapêutica.

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"REAL-WORLD" RESULTS OF HYPOMETHYLANT THERAPY IN MYELODYSPLASTIC SYNDROME, CHRONIC MYELOMONOCYTIC LEUKEMIA AND OLIGOBLASTIC ACUTE MYELOID LEUKEMIA

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Objectives: Myelodysplastic Syndrome (MDS) represents a heterogeneous group of myeloid neoplasms, resulting in progressive bone marrow failure and cytopenias. Although the allogeneic hematopoietic stem cell transplantation (HSCT) is the only potential curative treatment, only few patients are candidates. In this regard, hypomethylating agents (HMA)-Azacitidine (AZA) and decitabine (DEC) - appears as a standard treatment for higher-risk MDS, in addition to being considered in oligoblastic acute myeloid leukemia (AML) and chronic myelomonocytic leukemia (CMML). Although AZA improved the overall survival (OS) in clinical trials, results in real-world are discordant. This study aims to evaluate the clinical characteristics and outcomes of MDS patients treated with HMA in an academic hospital. **Material and methods:** Retrospective cohort, over 18 years of age, diagnosed with MDS, oligoblastic AML and CMML, *de novo* or secondary, treated with HMA and followed up at the cytopenias outpatient clinic at HCFMUSP from 2010 to June 2021. Data were collected from medical records and stored in REDcap. IWG 2006 criteria were used for response assessment. Kaplan-Meier curves were used for survival graphs, and Cox model regression for uni and multivariate analysis. **Results:** 70 patients, 60 (85%) treated with AZA and 10 (15%) with DEC. Median age at diagnosis was 60.9 years (IQR 48.7 – 68.3), 61.4% male. In relation to diagnoses, 28 had *de novo* MDS (32.9% with excess of blasts; 4.3% with multilineage dysplasia; 2.9% with ring sideroblasts); 7 had AML (10%); 24 secondary myeloid neoplasm (21.4% therapy related; 7.1% with germline/ Fanconi predisposition; 5.7% after acquired aplastic anemia). The median score of IPSS and IPSS-R was respectively 1.5 and 6.0 (high risk). Before treatment 35.4% of patients had poor or very-poor karyotype. Response evaluation was assessed in 51 patients (72.8%) at the end of fourth cycle. The overall response rate (ORR) was 66.6%, including complete, partial and marrow responses, besides hematological improvement. Twelve patients (17%) undergone HSTC. The median OS, since starting HMA, was 11.5 months (IQR 8.1 – 13.8 95% CI), with median follow-up of 15.9. In univariate analysis, variables associated with worse OS were late initiation of HMA (HR 2.39 95% CI 1.18 – 4.84, p =0.015), age (HR 1.03 95% CI 1.01 – 1.05, p

=0.007), poor-risk karyotype (HR 4.8 95% CI 2.29 – 10, p <0.001), hemoglobin < 8.5 (HR 3.44 95% CI 1.56 – 7.88, p =0.002) and platelets < 80.000 (HR 3.5 95% CI 1.49 – 8.23, p =0.002). In multivariate analysis, parameters associated with worse OS were transfusion dependency (HR 2.26 95% CI 1.27 – 4.04, p = 0.006) and poor karyotype (HR 2.53 95% CI 1.41 – 4.57, p =0.002). Thirty-five patients (50%) had febrile neutropenia, and 30% delayed one or more cycles. **Discussion:** The results reinforce the poor outcomes of higher-risk MDS despite the use of HMA. Some real-world studies previously published had already showed a suboptimal drug benefit, probably by the underutilization and low persistence of the treatment, in a subgroup of critically ill patients. **Conclusion:** This retrospective analysis confirms the poor prognosis of higher-risk MDS treated with HMA. Poor-risk karyotype and transfusion dependency are the main factors that impact the outcomes.

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CYTOGENETIC ANALYSIS OF 2,205 CASES OF HEMATOLOGICAL NEOPLASIA AND GENETIC DISEASES: A SINGLE CENTER EXPERIENCE

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Cytogenetics is defined as the study of chromosome morphology, pathology function, and behavior. Cytogenetics is important to define clonality for bone marrow disorders and for diagnosing a lot of constitutional disorders. We analyzed a ten-year experience of bone marrow and peripheral blood cytogenetics for defining clonal and not clonal disorders at the Cancer Cytogenomics Laboratory of the Federal University of Ceará. All bone marrow and peripheral blood samples were submitted to cell culture (for 24 hours and 72 hours, respectively), after which all were processed, and G-banding performed using trypsin and Wright-Giemsa staining. The karyotype results of 2,205 patients were analyzed including additional information such as age, sex, requesting unit and suspected diagnosis. Among these, 1744 (79.1%) were bone marrow samples and 461 (20.9%) were peripheral blood samples used to investigate constitutional changes. The female gender (54.4%) stood out in the Bone Marrow samples, aged between 71 and 80 years (20.2%). Among the bone marrow results, 726 of 1744 (42%) were normal and 431 of them (24.7%) were abnormal karyotypes. The main etiological suspicion was Myelodysplastic Syndrome (54.2% of cases), and 42.1% were normal. Among the chromosomal abnormalities, the main alterations found were: 26% cases with isolated del (5q) and/or other alterations, 10% of cases were complex, 10% were isolated del(11q) and/or with other alterations, 9% of cases with del (7q) isolated and/or with other alterations and 7% cases with +8 isolated and/or with other alterations, 2% cases had del(17q) isolated and/or with other alterations, 1% of cases had del(17p) and one case with i(17q). A total of 127 cases were suspected as AML, with 34.6% altered karyotypes, 34.4% normal karyotypes. Among the abnormal karyotypes: 20,5% cases with t(15;17) and 13,6% were complex karyotypes, 6,8% were del(11q23), 4,5% cases with t(8;21), 1 case with del (17p) and another with i(17q). A total of 161 cases were suspected as CML, among which: 49,7% abnormal karyotype, 24.2% were normal. Among the chromosomal abnormalities, 65% were t(9;22) and 2,2% were t(9;22) and other alterations and/or variants of t(9;22). In this way, this study shows that cytogenetic was important for diagnostic purposes of patients principally for diseases such as Myelodysplastic Syndrome, Acute Myeloid Leukemia and Chronic Myeloid Leukemia. Cytogenetic analysis is also fundamental for analysis of constitutional and somatic genetic disorders. Regarding the constitutional results, 176/461 (38%) showed chromosomal abnormalities with 66 (37.5%) showing trisomy 21 followed by trisomy 18 (14.7%) and androgen insensitivity syndrome (11.3%). Identification of constitutional or malignance chromosomal anomalies can provide important information for genetic medical counseling. Cytogenetic analysis of hematological neoplasms and for constitutional disorders is helpful for diagnosis and monitoring the effects of treatment, being still very important in the new molecular era.

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TROMBOCITOSE ESSENCIAL COM PROGRESSÃO PARA LEUCEMIA AGUDA: RELATO DE CASO

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Introdução: A trombocitose essencial (TE) é uma síndrome mieloproliferativa caracterizada pela hiperproliferação dos megacariócitos na medula óssea e trombocitose no sangue periférico. Podem ocorrer eventos trombóticos, hemorrágicos ou sintomas vasomotores. A evolução para leucemia aguda é rara. **Relato:** Paciente feminina, 68 anos, hipertensa, tabagista (53 maços-ano) e com neuralgia do trigêmeo. Uso de antihipertensivos, ácido fólico, ácido acetilsalicílico 100mg/dia e