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DIAGNOSTIC CHALLENGES OF AML AND PREGNANCY

H. Alaoui Mdarhri*[1,2], F. Ousty[3], A. Belmekki[1,2] and J. El Bakkouri[1,2]

[1]Medical Biology Laboratory, Cheikh Khalifa International University Hospital.
[2]Faculty of Medicine, Mohamed VI University of Health Sciences.
[3]Mohammed VI National Laboratory for Medical Analysis.

***Corresponding Author: H. Alaoui Mdarhri**
Medical Biology Laboratory, Cheikh Khalifa International University Hospital.

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ABSTRACT

Introduction: The management of acute myeloid leukemia (AML) in pregnancy remains a daunting clinical challenge for oncologists, obstetricians, patients, and their families given to the therapy-attributable risks for mother and fetus and the connected counseling regarding pregnancy continuation. Although the incidence of AML in pregnancy is low at 1 in 75,000 pregnancies, cancer represents the second most common cause of maternal death behind gestation-related vascular complications. Due to the small number of patients diagnosed during this time, there are only retrospective reviews and case series to guide complex management decisions.

KEYWORDS: AML, Pregnancy, Cytology.

CASE REPORT

we report the case of a 32-year-old woman who presented at 16 weeks of amenorrhea with a bycotopenia consisting of a normochromic normocytic anemia at 5.1g/ dl and thrombocytopenia at 137,000/mm^3, associated with an hyperleukocytosis at 114,710/mm^3, with a 35220/mm^3 monocyte count.

The myelogram showed a very rich marrow, with numerous megakaryocytes and 50% blasts, 10% myeloblasts and an estimated 25% mature granular contingent.

Numerous active macrophages and an obvious dysplastic background were also present.

With a cytological appearance in favor of mature granular AML (AML2-Fab). The presence of a highly undifferentiated blast clone suspected the high probability of biclonal acute leukemia.

Immunophenotyping revealed a low CD45 population expressing the immaturity markers CD34 and Tdt, as well as the strong markers CD79a and CD19. These cells did not express immunoglobulin light chains on the surface or the Mu chain intracytoplasmically, a phenotype compatible with CD10+ B lymphoid blasts. The presence of another intermediate CD45 population (5%) expressing the immaturity marker CD34 as well as the myeloid markers CD13, CD33 and CD117 with negative MPO was noted. These phenotypic features are in favor of myeloid blasts.

Our work presents the clinical, biological and prognostic particularities of this condition, and highlights the complexities of AML management in pregnancy.

DISCUSSION

There are no formal management guidelines and sparse data on consolidation during this period. The appropriate dosing of chemotherapy, fetal monitoring, and timing of delivery all represent challenges in providing optimal care and improving maternal and fetal overall survival. In a recent meta-analysis, the maternal median overall survival rate for 87 women with AML in pregnancy was found to be 30%. The live birth rate in this study for chemotherapy-exposed neonates was 87%, and the complication rate was 16%. These complications included unspecified deformations, patent ductus arteriosus, hydrocephalus, ventricular septal defect, cytopenias, intracranial hemorrhage, and respiratory compromise. Management recommendations from experts in the field showed significant heterogeneity underscoring the need for consensus guidelines.

CONCLUSION

There is a critical need of management guidelines to address timing and dosing of anthracycline/cytarabine based regimens, potential drug toxicity to the mother and fetus, and transplant considerations in intermediate and

high-risk patients. A national registry for leukemia patients treated in pregnancy could be formed to help answer these questions and improve maternal and fetal overall survival rates. Delays in chemotherapy should be avoided, and a multidisciplinary team is needed to provide comprehensive care to patients and their families.

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