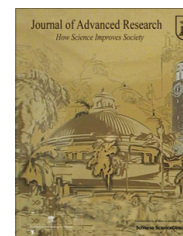




Cairo University
Journal of Advanced Research



REVIEW

Hematologic malignancies during pregnancy: A review

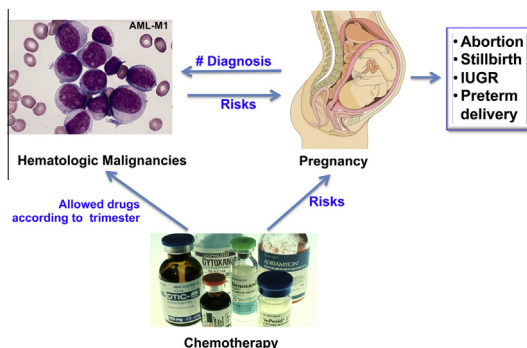


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GRAPHICAL ABSTRACT



ARTICLE INFO

Article history:

Received 20 September 2015
Received in revised form 3 February 2016
Accepted 3 February 2016
Available online 8 February 2016

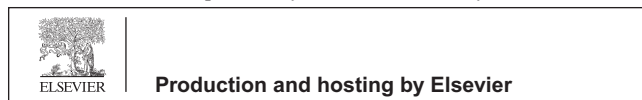
ABSTRACT

Malignancy is the second most common cause of mortality in the reproductive period and it complicates up to one out of every 1000 pregnancies. When cancer is diagnosed during pregnancy, the management approach must take into consideration both the mother and her fetus. Hematologic cancers diagnosed in pregnancy are not common, resulting in paucity of randomized controlled trials. Diagnosis of such malignancies may be missed or delayed, as their symptoms are similar to those encountered during normal pregnancy. Also, many imaging studies may be hazardous during pregnancy. Management of these malignancies during pregnancy

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Peer review under responsibility of Cairo University.



Keywords:

Hematologic malignancies
Pregnancy
Acute leukemias
Chronic myeloid leukemia
Lymphomas

induces many treatment-related risks for mother and baby and should consider patient's preferences for pregnancy continuation. In this article, hematologic malignancies diagnosed in pregnant patients including acute leukemias, chronic myeloid leukemia, lymphomas, multiple myeloma and myeloproliferative neoplasms, will be reviewed, including diagnostic and management strategies and their impact on the pregnant patient and the developing fetus.

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Hossam K. Mahmoud received his Dr. med. habil Degree in Hematology from University of Essen, Germany, in 1986. He is a Professor of Hematology, at National Cancer Institute (NCI), Cairo University, since 1997. He was the President of Cairo University from August 2008 till June 2013. He received "Cairo university encouragement prize for medical science" (1990); "State recognition prize for advanced technological sciences serving the medical field" (2012); and "Medal

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Gamal M. Fathy earned his MD degree in Clinical Hematology from Medical Research Institute, Alexandria University, in 2015. He is currently working as a Consultant of Hematology and BMT at Nasser Institute Hospital for Research and Treatment (NIHTR), Ministry of Health, Cairo, Egypt. He joined the Hematology and BMT Unit at NIHTR in March 2001, and since that time he participated in more than 2500 cases of allogeneic and autologous BMT as well as management

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Introduction

Having malignancy during pregnancy may put the patient and the treating physician in a very serious situation, as weighing the risk of cancer versus the lethal effect of the chemotherapy used for its treatment is a very tough issue. So it is very important to address whom, when, and how to treat those patients. That is to say treating physician should ask himself some questions. The first is would this type and/or stage of the disease needs immediate intervention or treatment could be postponed till delivery. The second question is how can he treat this case during pregnancy using the safest road to reach a safe place, meaning that which type of chemotherapy would the mother tolerate and exert no or little side effects on the fetus during different trimesters of pregnancy.

Incidence

Cancer is diagnosed in approximately one out of 1000 pregnant women and this incidence is expected to grow due to the rising median age at pregnancy. The most common cancers associated with pregnancy are cervical (1.2:10000 pregnancies), breast cancer (1:3000–10000), melanoma (2.6:1000), lymphomas (1:1000–6000) and leukemias (1:75000–100000). Hematologic malignancies, which are considered to be diseases of old age, such as multiple myeloma (MM) and myeloproliferative neoplasms (MPNs), are recently more commonly encountered while the patients are pregnant owing to the rising median age at pregnancy, improved diagnostic molecular

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