Global Journal of Medicine and Public Health
www.gjmedph.org

An uneventful pregnancy and delivery in a patient with chronic myeloid leukemia

Prathima S*, CSBR Prasad**, Udayakumar M***, Narayanaswamy M****

*Assistant Professor in Pathology, ** Associate Professor in Pathology, *** Professor in Pathology, **** Professor in Obstetrics & Gyneacology, Sri Devaraj Urs Medical College, Tamaka, Kolar- 563 101. Karnataka.

ABSTRACT

The concomitant occurrence of chronic myeloid leukemia and pregnancy is uncommon and projected to be one in 75000-100000 pregnancies annually. We present a case of 28 years old lady with 36 weeks of gestation diagnosed as chronic myeloid leukemia in chronic phase. Her pregnancy was uneventful and she delivered a healthy male baby. She breast fed the baby for 3 weeks before initiating treatment for chronic myeloid leukemia. Close vigilance and relevant investigations are of paramount importance in recognizing this extremely rare disease during pregnancy.

Key words: Pregnancy, Delivery, Chronic myeloid leukemia.

Corresponding Author: Prathima.S.,Assistant Professor in Pathology, Sri Devaraj Urs Medical College, Tamaka, Kolar- 563 101.

E-mail – parianil@gmail.com

Funding: None

Conflict of interest: None

Introduction

Chronic myeloid leukemia (CML) is a clonal stem cell disorder characterized by increased proliferation of myeloid elements at all stages of differentiation. It is characterized by two distinct clinical stages. The first (chronic) stage is marked by a proliferation of myeloid cells showing full range of maturation and eventually a decrease in myeloid differentiation generally occurs as the disease enters an advanced state (accelerated stage or blastic stage) with a very poor prognosis.[1] The incidence of chronic myeloid leukemia in pregnancy is one is 75000-100000 pregnancies with a risk of leucostasis, blast crisis and placental insufficiency with consequent low birth weight, fetal prematurity and increased mortality.[2] We report a case of a 28 years lady diagnosed as chronic phase of CML in 36 weeks of gestation delivering a healthy male baby in a teaching hospital, Sri R.L. Jalappa Hospital and Research centre attached to Sri Devaraj Urs Medical College.

Case history

A 28 years old woman, gravida 3, parity 2 and living 2 with 36 weeks of gestation presented with labour pains. Her antenatal period was uneventful. Menstrual cycles were regular. Routine hemogram revealed a total leucocyte count of 1,03,000 cells/cumm, hemoglobin 11.7g/dl, platelets 2,67,000 cells/cumm, neutrophils 64%, myelocytes 10%, metamyelocytes 6%, myeloblasts 2%, lymphocytes.

Figure-1: Peripheral blood smear of CML in chronic phase. (Leishman, x1000)

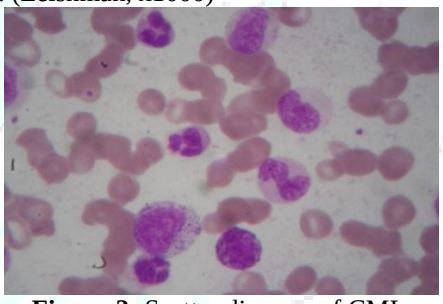
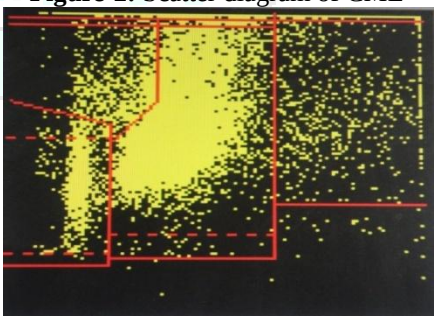


Figure-2: Scatter diagram of CML



14%, basophils 4% (Figure-1). She was diagnosed as a case of CML-chronic phase in labour. She delivered a normal healthy male baby weighing 2.5 kg with Apgar score of 7 at 1 minute and 8 at 5 minutes with no abnormality and blood counts were normal. Repeat Hemogram was done 24 hours after delivery which revealed, total leucocyte count

88,000cells/cumm, Hemoglobin 10.8g/dl and platelets 3,60,000 cells/cumm (Figure-2). Ultrasonography of abdomen after delivery showed splenomegaly. Bone marrow examination revealed hypercellular bone marrow with increased granulopoiesis and 2 % blasts. Cytogenetic study (46XY, t(9;22) (q34;q11), bcr/abl positive), confirmed the diagnosis of chronic phase CML. The child was breastfed for 3 weeks before starting therapy for chronic phase CML.

Discussion

Leukemia during pregnancy is very uncommon. CML accounts for less than 10% of all leukemias during pregnancy.[3] Usually, the diagnosis is made incidentally during a routine complete Hemogram for unrelated reasons. Patients usually present with weakness, malaise and abdominal discomfort due to splenomegaly.[4] Diagnosis is usually based on peripheral blood leucocytosis with basophilia and eosinophilia which is further confirmed on bone marrow examination and detection of a Philadelphia (Ph) chromosome and/or the BCR-ABL rearrangement. Philadelphia chromosome can be detected by conventional chromosomal analysis, molecular cytogenetic detection of gene rearrangement applying fluorescent in situ hybridisation and molecular genetic analysis of fusion products using polymerase chain reaction.[5]

Management of CML during pregnancy is difficult for patients, their families and care providers and hence treatment of CML and pregnancy remains a clinical challenge. There is no evidence that the behaviour of chronic myeloid leukemia is altered in pregnancy.[6] However there is a risk of leukostasis and placental insufficiency with consequent low birth weight, foetal prematurity and increased mortality if CML is left untreated during pregnancy. There have been few reports of successful treatment of CML during pregnancy by therapeutic agents like hydroxyurea, bulsulfan, interferon α, imatinib and bosutinib. Leukapheresis is also being tried in few cases. However there has been no systemic investigation of the effect of these therapeutic options in pregnancy.[7] Recommendations of medical care for the future pregnancy should include detailed description of possible risks to the patient and fetus which includes possible birth abnormalitites, birth defect, deformities and/or termination of pregnancy. [8]

Conclusion:

Historical evidence shows a median survival of patients with untreated CML is approximately 30 months, and does not evolve very rapidly at the clinical levels.[9] Hence resistance or disease progression is unlikely to occur during the relatively short period of pregnancy and thus the case can be managed by close observation without active intervention in the best interest of both the mother and fetus. However if there is presence of symptoms, a rapidly increasing leucocyte count or emerging signs of a more advanced disease will mandate the need for immediate therapy.

References

1. Rabinowitz I, Larson SR (2004). Chronic myeloid leukemia: Wintrobe's Clinical Hematology. 11th ed. Philadelphia. Lippincott William & Wilkins. pp. 2235-2258.
2. Celiloglu M, Altunyurt S, Undar B (2000). Hydroxyurea treatment for chronic myeloid leukemia during pregnancy. Acta Obstet Gynecol Scand. 79: 803-4.
3. Lichtman M, Liesveld J (2001). Acute myelogenous leukemia: Williams Hematology (ed 6). New York, McGraw-Hill. pp 1074-84.
4. Kantarjian HM, Smith TL, McCredie KB et al (1985). Chronic myeloid leukemia: A multivariate analysis of the associations of patient characteristics and therapy with survival. Blood. 66: 1326-35.
5. Naumann S, Decker HJH: Genesis of variant Ph translocations in CML. Cancer Genet Cytogenet 2003;147(1):18-22
6. Munkarah AR, Morris (1999). Malignant disease in pregnancy: High Risk Pregnancy Management Options. 2nded. USA. WB Saunders. pp 954-55.
7. Al Sabty Firas, Demeclnova E, Mistrik M (2008). Leukemia in pregnancy. Bratisl Lek Listy. 109: 364-66.
8. Ault P, Cortes J. Planned Pregnancy for a patient with Chronic Myeloid Leukemia. Internet J Pathol 2010(7).
9. Faderal S, Talpaz, Estrov E, O' Brien S, Kurzrock R, Kantarjian HM. The biology of chronic myeloid leukemia. The New England J Med 1999;341:164-72.

Access This Article Online

Quick Response Code:

Website: www.gjmedph.org