Acute Lymphoblastic Leukemia During Pregnancy (A Case Report)

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Hematologic malignancies rarely complicate pregnancy. Exact incidence of leukemia during pregnancy is not accurately known. In 1958 Yahia' et al calculated an incidence of 1 in 75,000 pregnancies. In Caligiuri and Mayer's series (1989) most of the cases were of acute leukemia, accounting for 89%; 61% were acute myeloid leukemia, and 28% were acute lymphoblastic leukemia. CML accounted for only 7% of the cases. The distribution was similar to that reported by Reynoso et al (1987). Pregnancy itself does not appear to affect adversely the natural course & prognosis of these malignancies. Acute leukemia seldom presents during pregnancy and though pregnancy may not affect the course of leukemia, fetal complications and maternal mortality are high.

The current case is of a successful pregnancy who received induction chemotherapy as part of her treatment for acute lymphoblastic leukemia at Sanjay Gandhi Post Graduate Institute of Medical Science, Lucknow and was referred for obstetric management and delivery at Dept. of Obst Gynae King George Medical College Lucknow.

Case Report

A 28 year old woman gravida 2, para 1 presented with mass in the neck with compression symptoms (dysphagia & dyspnoea) with 33 weeks pregnancy and IUGR. There was no remarkable past medical & obstetric history.

The initial antepartum course during present pregnancy was uneventful in first & second trimester. At 26 weeks gestation the patient noticed a lump in the neck anteriorly which gradually increased. Examination showed soft to firm, large diffuse smooth, non-tender, mass in the anterior aspect of neck measuring 12 x 10 cm with lower end not reachable as it was extending into the superior mediastinum along with cervical and axillary lymphadenopathy. Patient started having dry cough and dyspnoea even while lying in prone position.

Initially she was investigated for thyroid disorder by some local doctor. After getting negative results, FNAC of the mass & cervical & axillary lymph node was done which showed typical medium size lymphoid cell giving a suspicion of lymphoma / leukemia. To confirm the diagnosis bone marrow aspiration was done which revealed the picture of acute lymphoblastic leukemia at Sanjay Gandhi Post Graduate Institute of Medical Science Lucknow. Her peripheral blood smear was also in favour of acute leukemia. Abdominal ultrasonography showed a growth retarted fetus of 33 weeks with normal modified biophysical profile. Due to immaturity and SGA fetus she was given preinduction chemotherapy with steroids for 12 days, prednisolone 60 mg / day. However, as she continued to have problem in lying down position and cough progressed, she was administered cyclophosphamide 1 gm I.V along with vincristine 2 mg I.V. with full hydration. Four days after cyclophosphamide infusion she was induced by oxytocin and she delivered a live female baby of 1.8 kg by normal vaginal route. Her postpartum period was smooth and uneventful. Her immature cells in peripheral blood at the time of admission were 70% but at discharge dropped to nil. She was discharged and chemotherapy was planned after about one week. Cord blood was sampled for pancytopenia due to antineoplastic drugs & placenta was sent for histopathological examination. Cord blood reports were normal. Baby remained on I.V. fluids under strict neonatal care. But relatives took the baby home as patient had to be readmitted at Sanjay Gandhi Post Graduate Institute of Medical Science, Lucknow for further treatment. Placental histopathology showed 3rd trimester villi and umbilical

cord vessels. There was no evidence of infiltration by leukemic cells.

Comment

The diagnosis of acute leukemia during pregnancy demands immediate treatment irrespective of fetal condition, as the only hope for cure is immediate aggressive management. Mean survival in nonpregnant patients without treatment is reported to be 2 months after diagnosis(Tivery, 1955), a duration that would not allow for fetal maturation in most cases. In a review of 58 cases by Reynoso et al (1987) complete remission rates of 77.2% and 75.9% with intensive chemotherapy during pregnancy were found for mothers with acute myelogenous leukemia (AML) and acute lymphocytic leukemia (ALL) respectively. The median survival was 16 months. This complete remission rate is comparable to the 73.9% reported in other study of nonpregnant patients (Hoelzer et al 1988) but their median survival was 27.5 months.

Acute leukemia may have a deterimental effect on pregnancy. Acute leukemia and its treatment during pregnancy is associated with fetal death and prematurity. The earlier the diagnosis of leukemia is made, the worse the prognosis. The risk of teratogenesis with cytotoxic drugs exposure during the first trimester is well documented. The rate of fetal malformation from combination drugs was 25% versus 17% for single agent use (Doll et al, 1988). In the second & third trimester exposures, the rate of malformation was only 1.5% which is less than the background incidence of 3% (Kalter and Warkany,1983).

Transient myelo suppression frequently occurs in the infants delivered to women with acute leukemia exposed to chemotherapy. Reynoso et al (1987) reported cytopenia in 33% of those exposed to chemotherapy in the last month of gestation. Only a few reports have documented the long term effects of in utero exposure to chemotherapy, but the results thus far have been encouraging.

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