Successful Pregnancy Outcome and Post-partum Sterilisation in a Patient with Lymphoblastic Leukemia

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Pregnancy in a patient of lymphoblastic leukaemia raises concern about the health and safety of the mother and the fetus.

A 24 year old female (Gravida 3, para 2, previous uneventful vaginal deliveries), known case of type 4 acute lymphoblastic leukemia, on maintenance phase chemotherapy (oral 6-mercaptopurine 150mg daily and oral methorexate 50mg weekly) was referred to us with pregnancy having amenorrhoea of four months duration. Her last child birth was 5 years ago. Three years back, she had developed easy fatiguibility, fever and bleeding diasthesis. She was found to have sternal tenderness and hepatomegaly. Her haemogram analysis had shown haemoglobin – 6.2 gm%; platelet – 57,000/ul; leucocyte count 1,85,000/ ul; nucleated RBC – 2-3/HPF and blast cells (PAS-ve) 49%. Her bone marrow was hypercellular and was totally replaced by blast cells with occasional normoblasts. There were no megakaryocytes. Clinical and laboratory profiles were suggestive of acute lymphoblastic leukaemia. The patient was given intensive chemotherapy (adriamycin, vincristine and prednisolone) for 1 month, consolidation chemotherapy (cyclophosphamide, 6-mercaptopurine and intrathecal methotrexate and oral methotrexate) for last 3 years. She also received cranial irradiation in six fractions. She required 14 units of blood transfusion during her therapy.

At the first antenatal visit, her general physical examination was normal. On abdominal examination, uterus corresponded to 16 weeks gestational size. Her blood counts showed haemoglobin – 14.2 gm%, platelets – 1,38,00 /ul, total leucocyte count 4,5000/ul; with no blast cells in peripheral blood film. Liver functions and renal functions were within normal limits. Transabdominal ultrasonography revealed single live fetus corresponding to her period of gestation with no obvious congenital malformation. The patient and her spouse were counseled about the teratogenic risk to the fetus as she was on chemotherapy and advised to consider termination of pregnancy, considering also the fact that she had two children. The couple however wished to continue with the pregnancy. Maintenance chemotherapy had to be continued under close monitoring for side effects of the drugs, blood counts as well as fetal well-being. Her total leucocyte count ranged between 4,500/ul – 8,500 /ul and platelet count between 1,38,000/ul – 1,80,000/ul throughout the second and third trimesters of pregnancy.

The haemoglobin was kept at a level above 9 gm% with iron (100mg/day) and folic acid (5mg/day) throughout her pregnancy. Level II ultrasonography and fetal echocardiography did not reveal any abnormality. There was no fetal growth retardation. Twenty-eight weeks onwards biweekly nonstress test (NST) and Biophysical profile were done for fetal wellbeing. Cytotoxic drugs had to be stopped at 32 weeks of gestation due to occurance of severe oral ulcerations and generalized pruritus.

At 39 weeks of gestation she went into spontaneous labour and had vaginal delivery of a normal male baby weighing 3.03 kg with apgar score of 9, 10 at one minute and 5 minutes. There was no gross congenital malformation in the baby. The mother did not have any postpartum haemorrhage. She was allowed to breast feed her baby within two hours of delivery as she had stopped chemotherapy. After two days of delivery, postpartum ligation under general anaesthesia was performed uneventfully. She did not require any blood transfusion during pregnancy. The mother and child were healthy at 6 weeks after delivery. Restarting maintenance cytotoxic therapy after 3 months of delivery is planned.

Thus, with close monitoring and in collaboration with the medical oncologist, successful pregnancy outcome for mother and child (followed by post partum sterilization) in a woman with lymphoblastic leukemia could be achieved.