Results of Outcome of Two Pregnanacies with Imatinib

Samrat Shah1, Bhise Rohan2, B Srinivas3, Lunge Snehal4
1Graduate in Medicine, 2Medical Oncologist, 3Physician, 4Dermatologist, JN Medical College, Belgaum, Karnataka

Tyrosine kinase inhibitors provide lengthy remissions and the possible normal life expectancy in patients with Chronic Myelogenous Leukemia. However imatinib is now recommended as the first-line therapy. However, treatment of maternal CML with imatinib during pregnancy is not recommended because of the potential teratogenicity in animal studies. There are very few case reports about effect of imatinib on conception and pregnancy suggesting that imatinib has minimal effect on pregnancy outcome. We report results of two pregnancies in a single patient on imatinib which was continued throughout pregnancy.

A 26 year old female came to hospital with history of per vaginal leak since morning. She was booked case of 33 week 3 days of gestation on regular antenatal checkup. Patient was known case of Philadelphia chromosome positive chronic phase CML diagnosed since 2009 on tablet imatinib 400 mg/day. Patient tolerated drug well and had complete hematological and cytogenetic remission. Her Quantitative assay for BCR-ABL in 2011 was 0.001 (major cytogenetic response). Patient continued to take the drug during the entire course of pregnancy.

She was G2P1L0. First pregnancy was pre term vaginal delivery of male baby weighted 1.47 kg and was active and healthy.

Pregnancy and cancer is a complex situation. Often treatment cannot be delayed. Many cases with CML have been reported to have a successful pregnancy. However, there is a paucity of data regarding CML patients on imatinib mesylate becoming pregnant and completing pregnancy successfully. Imatinib is known to have antiangiogenic effect in animal models mediated by platelet-derived growth factor receptor (PDGFR); however, as human umbilical vein endothelial cells do not express PDGFR, effect is unknown. Animal studies have observed encephalocele, anencephaly, and reduced and absent parietal bones as teratogenic effects at dose above 100 mg/kg. Female rats also experienced early fetal resorption. Due to paucity of data on these rare congenital malformations, Imatinib has not been recommended particularly during the period of organogenesis.

However imatinib did affect course of both pregnancies in our patient. Both the pregnancies resulted in premature deliveries. There is need to follow up this child for long term effects.

Continuation of imatinib in pregnancy is a controversial issue. As there are case reports alone and no other literature available regarding continuing imatinib in pregnancy, it is difficult decision for the doctor and the patient to continue or stop imatinib during pregnancy. Further research is warranted but it’s a difficult field as the animal studies warrant stoppage of imatinib during pregnancy.

References