

Successful Pregnancy Outcome in end-stage Renal Disease (ESRD) Patient : A Case Report

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Abstract:

Pregnancy in women with chronic kidney disease (CKD) has always been considered as a challenging event both for the mother and the fetus. Outcomes of pregnancy in patients with End stage renal disease (ESRD) have long been considered to be extremely poor and challenges are harder in ESRD patients undergoing maintenance hemodialysis(MHD) . The cases of successful full term pregnancy occurring in an ESRD patient are still very few in whole world even after the evolutionary improvement of medical care. Development of well established multidisciplinary center make it possible to bring a successful pregnancy outcome among ESRD patients who are on going MHD. Patients with CKD are usually amenorrheic and fertility is markedly reduced . Women with chronic kidney disease, who get pregnant have poor pregnancy outcome in term of fetus and mother. Here we report a case of 34 years old lady, mother of two children , housewife presented in Bangladesh Specialized Hospital with a diagnosis 3rd G 29 weeks of pregnancy with ESRD (on maintenance hemodialysis) with Hypertension. She was treated conservatively with joint consultation with Consultant Obstetrician, Nephrologist and Pediatrician. Her elective Lower uterine segment Cesarean section (LUCS) was done at her 35 weeks of pregnancy due to fetal distress with previous history of 2 LUCS. Both the mother and baby were healthy while discharge from hospital.

Introduction:

End Stage Renal Disease patients who are getting maintenance dialysis are usually amenorrheic and infertile ¹ and Pregnancy is rare among them. Even after giving meticulous multidisciplinary care , most pregnancies end in spontaneous or induced abortions . And even if pregnancy continues they are complicated by Pregnancy induced hypertension (PIH), Intra uterine growth retardation (IUGR), Intra uterine fetal death (IUD), Preterm delivery ^{1,2}. Chronic renal disease although uncommon, can have a major impact on the outcome of pregnancy. The incidence of pregnancy with chronic kidney disease is between 1 to 12 per 10,000 women ³. There is evidence that the frequency of pregnancy in women on maintenance hemodialysis appears to be increasing, ranging from 1-7% in recent reports ³ .

Case Summary:

A 34-year-old Muslim, housewife, mother of two children delivered by LUCS, presented to out patient department of Obstetric Unit in Bangladesh Specialized Hospital with a diagnosis: 3rd G 29+ weeks of pregnancy with ESRD (on maintenance hemodialysis) with Hypertension. According to the patient's statement, she was diagnosed as a case of (CKD, stage 5) on 2016, while investigating for her severe illness. Then initially she was conservatively treated, as her renal function was deteriorated progressively, her dialysis was started on April, 2017. She also tried for renal transplantation for 3 times but in all times it was rejected.

She is hypertensive for last 8 years and is on regular oral anti hypertensive drug. As her menstrual cycle

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was infrequent for last 2 years, she was incidentally diagnosed as 20 weeks of pregnancy by ultrasonography following 19 months of amenorrhea. She was on regular antenatal checkup and regular supervision under nephrologist throughout this pregnancy. During pregnancy she received hemodialysis 5-7 days per week, with high protein diet and 1000 ml oral fluid per day. She was on regular medications throughout pregnancy: Tab.Methyldopa, Tab.Nifedipine, Tab. Aspirin, Tab.Ursodeoxycholic acid, tab.Phenobarbital, cap.Calcitriol, inj.Epoetin alfa , inj.Potassium Chloride.

She was non diabetic, non-asthmatic, no history of thyroid disorder during pregnancy.

During her 30 weeks of pregnancy she noticed less fetal movement with generalized itching in whole body and was admitted in Bangladesh Specialized Hospital (BSH) under Obstetric Unit. Her liver function was mildly altered during that period and the patient was treated conservatively with Tab. Ursodeoxycholic acid and Inj Corticosteroid was given for lung maturation and being discharged after recovery.

Important laboratory Investigations including all hematological and biochemical parameter were within normal limits including , Oral glucose tolerance test, TSH, liver function test, S Electrolytes, coagulation profiles and urine analysis but except her renal function test. Her Hb% was 9.2g/dl and Serum creatinine was 5.4mg/dl before caesarean section operation.

Serial ultrasonography (USG) of pregnancy profile with growth scan was done .Her last USG of pregnancy profile shows 35 weeks single live pregnancy with cephalic presentation, placenta : posterior and away from os, estimated fetal birth weight :2.6 kg, amniotic fluid index : 10, bio physical profile: 8/8, doppler study was unremarkable, no uteroplacental insufficiency was seen.

She was advised for elective LUCS at her 35 weeks of pregnancy due to less fetal movement and fetal distress.

On 06.10.21 her LUCS with bilateral tubal ligation was done under spinal anesthesia. There was no anesthetic hazard during operation. Post-operative period was carefully supervised with 1000 ml fluid restriction and adequate analgesic and antibiotics.

She delivered a female baby, weight: 2.6kg with Apgar score : 8/10 at 1min and 9/10 at 5min. But later the

baby got admitted in NICU with diagnosis of Transiant Tachypnea of newborn. She was treated conservatively in NICU.

The post-operative period of the mother was uneventful and patient received her maintenance hemodialysis on her 2nd postoperative day (POD). The mother and her baby were discharged from hospital at 6th POD.

Discussion:

In 1971 Confortini et al,⁴ reported the 1st successful pregnancy in a 35 years old women with ESRD on hemodialysis.

The largest study "Registry of pregnancy in dialysis patients" showed 2% of patients on dialysis became pregnant over a 4years period ⁵ . The estimated frequency of conception in patients on dialysis is within a range as variable as 1.4% per year in Saudi Arabia to 0.5% in USA ⁶ .

The reduced fertility is due to anovulation and hyperprolactinemia leading to oligomenorrhea seen in female patients on dialysis ⁷ . As was seen in our patients.

Though pregnancy occurs in a patient with chronic kidney disease a study done in Japan showed that it resulted in spontaneous abortion in 56% of patients, 11% developed still birth , 14% had neonatal death , 18% had therapeutic abortion , approximately 40% abortions occurred in 2nd trimester ⁸ .

The prognosis for successful conclusion of pregnancy is better for patients who begin dialysis after the onset of pregnancy as compared to patients who are already on dialysis (72.6% and 37.5%) respectively ⁶ .

An increase dose of dialysis with a weekly of Kt/V (fractional urea clearance) 6-8 or dialysis 5-6 days per week is considered beneficial ⁷ . In our patient she used to received dialysis 6 times per week.

Conclusion:

Those women on dialysis who wish to conceive or continue their existing pregnancies should be given special antenatal and neonatal care. Joint efforts of nephrologist ,dialysis unit staff,nutritionists and obstetricians can help to make the pregnancy successful. Among the main precautions that must be taken with pregnant women on dialysis are the maintenance of low levels of pre dialysis urea, the adequate control of blood pressure, the control of anemia, and the care to avoid infections, nutritional

deficits and strictly monitor fetal growth and development. Thus we can have an increase in success rates of these pregnancy.

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