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Case Report

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A case report of spontaneous conception with successful pregnancy outcome in a patient with end-stage chronic renal failure

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Abstract

Renal failure is known to be associated with impaired fertility and high pregnancy complications. Nevertheless, regular dialysis can restore conception and improve pregnancy outcome. The authors hereby report on a case of spontaneous conception in a young woman with end-stagerenal failure being dialyzed. The pregnancy was marked by premature rupture of membranes and acute fetal distress at 35 weeks gestation. A female baby of weight 1970 g was delivered by cesarean section. Postpartum period was uneventful for both the mother and her baby. This case report reminds us that, while waiting for kidney transplantation, intensified hemodialysis improves spontaneous conception and pregnancy outcome among women with end-stage renal failure. The authors also discuss in this case presentation the various pregnancy complications that can be observed in women with end-stage renal disease.

Keywords: Chronic kidney disease, Conception, Hemodialysis, Pregnancy outcome.

INTRODUCTION

Renal failure is commonly associated with impaired fertility [1- 3]. Moreover, when conception occurs, there is a high rate of pregnancy complications such as the occurrence of hypertension and pre-eclampsia, the development of nephrotic syndrome, maternal anemia, polyhydramnios and poor fetal growth [2, 4]. On the other hand, pregnancy is known to worsen renal failure [5, 6]. Therefore, pregnancy is not recommended in this status. Nevertheless, some women, especially nulliparas or pauciparas, might still need to procreate, despite the possible pregnancy complications. Studies showed that regular dialysis can improve pregnancy outcome [2, 7]. The authors hereby report on a case of favorable pregnancy outcome in a woman with end-stage renal failure dialyzed regularly.

CASE REPORT

A woman aged 25, G1P0 consulted on June 2nd, 2015 for premature rupture of membranes at 35 weeks gestation. This woman had essential hypertensive disease diagnosed in 2009 with initial blood pressure (BP) at 210/120 mm Hg. She was successfully managed with nicardipine (Loxen, Sandoz) (20 mg every 6 hours) and labetolol (Trandate, Allen and Hanburys) (200 mg every 8 hours), both orally.In January 2013, she presented a stage 5 chronic renal failure due to post-streptococcal glomerulonephritis (blood urea: 1.10 g/l with a normal value between 0.15 and 0.45, serum creatinine: 73.8 mg/l with a normal value between 7.0 and 15.0, Alkaline reserve 13.68 mmol/l with a normal value between 22 and 29). She was frequently anemic (hemoglobin between 7,1 and 8.2 g/dl) with low platelet level (49.10^6 to 69.10^6/ml). Serum electrolytes were within the normal values. She had secondary amenorrhea frequently since January 2013. She was treated by dialysis twice a week. She presented on March 5, 2015 with a distended abdomen and a five-months length secondary amenorrhea. Pregnancy was suspected and an ultrasound scan confirmed the presence of a 22 weeks gestation intrauterine normally evolving pregnancy and polyhydramnios (deepest pouch of amniotic fluid of 82 mm, amniotic fluid index of 210 mm). From this time, her pregnancy was followed up by an obstetrician and a nephrologist. The woman was being dialyzed 6 days weekly for a duration of 4 hours daily.

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On admission, her general condition was satisfactory, the BP was 150/100 mmHg. Her conjunctivae were pink. The fetal presentation was cephalic and the fetal heart rate was 123 beats/min, but irregular. On vaginal examination, the cervix was 2 cm dilated with a meconium stained amniotic fluid. Acute fetal distress was suspected. Hemoglobin concentration was 11.2 g/dl. After intra-uterine resuscitation (oxygen administration, left lateral position), a female neonate whose birth weight was 1970 g with an Apgar score of 7 and 9 at 1st and 5th minutes respectively was delivered through an emergency cesarean section, with no findings explaining the fetal distress. Post operatory period was uneventful and the mother was discharged six days later. The neonate was admitted in the neonatal unit for low birth weight and prematurity and discharged 4 weeks later with a weight of 2110 g.

DISCUSSION

Although infertility is impaired in renal failure because of anovulation, dialysis has been shown to restore ovulation in some women [1], as in our patient who had no difficulty conceiving. This might also be favored in our case by her young age given that ovulation is more regular in younger women.

The causes of renal failure are multiple. It can be due to diabetes, hypertensive diseases, septic or hypovolemic shock or to acute glomerulonephritis, as in our case. Chronic renal disease and renal failure are associated with anovulation and consequent secondary amenorrhea and infertility, which usually begins at the onset of the disease. Anovulation is due to hypogonadism associated with hypothalamic-pituitary-ovarian axis dysfunction, a disorder at the level of the hypothalamus caused by central inhibition of the pulsatile generation of gonadotropin releasing hormone (due to hyper-uremia) and by a primary disorder of gonads [1-3]. A hyperprolactinemic state is frequently observed, although its normalization with bromocriptine does not reestablish normal menstruation. Nevertheless, the normalization of blood urea nitrogen (BUN) level by dialysis restore the normal reproductive endocrine functions including conception rate.

Complications of renal failure in pregnancy include intra-uterine growth restriction due to chronic anemia or hypertension. This has also been observed in a study conducted in Morocco [7]. Growth restriction in our case was mild and might be due to chronic hypertension alone.

Anemia is frequent due to decreased production of erythropoietin. Polyhydramnios is frequently observed, as in our patient, resulting from increased fetal diuresis due to high placental BUN [8]. Hypertension is linked to the disturbance of renin-angiotensin-aldosterone axis observed in chronic renal disease. Pre-eclampsia is a complication frequently observed [4, 9].

The explanation of acute fetal distress in our case is not clear. It might be due to occult cord compression following premature rupture of membranes, favored itself by polyhydramnios. Some authors found that premature delivery was frequent with a mean gestational age at delivery of 35 weeks, as in our case, and a mean birth weight of 1800 g [7]. Our patient was delivered prematurely because of premature rupture of membranes associated with acute fetal distress. The slightly improved birth weight of 1970 g in our case might be due to the fact that dialysis was done 6 days weekly, while it was done only 4 to 6 days in the study by Doukkali *et al* [7]. This shows that if we increase dialysis frequency and/or duration (intensified hemodialysis), which can be done as a home-based procedure, we might improve pregnancy outcome, almost similar as in women without renal failure, as observed by other researchers [10]. While waiting for kidney transplantation, women with end-stage renal injury desiring pregnancy can expect spontaneous conception and favorable pregnancy outcome with intensified hemodialysis. Further studies are necessary to confirm these assertions. In February 2017 when this woman was received in our unit for suspected right hemorrhagic cyst, her 20-months-old baby was in good health.

CONCLUSION

This case report shows that spontaneous conception can occur in young women with renal failure being dialyzed regularly. Such pregnancies are associated with increased risk of maternal and neonatal complications. Therefore, close follow-up including daily dialysis should be done to minimize these complications.

Conflict of interests

The authors have none to declare

Informed consent

Was obtained from the patient.

Author contributions

Case management – E.N., Patient follow-up – E.N., N.N.A.; Literature Search – C.E.E.; Writing – E.N, C.E.E.; Critical Reviews – E.N., N.N.A.All authors approved the final version of the manuscript.

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