International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2021; 5(1): 11-12
Received: 29-10-2020
Accepted: 06-12-2020

Priyanka Meena
Department of Obstetrics and Gynaecology, University College of Medical Sciences and GTB Hospital, Delhi, India

Alpana Singh
Department of Obstetrics and Gynaecology, University College of Medical Sciences and GTB Hospital, Delhi, India

Rajeshwari Kumari
Department of Obstetrics and Gynaecology, University College of Medical Sciences and GTB Hospital, Delhi, India

Corresponding Author:
Priyanka Meena
Department of Obstetrics and Gynaecology, University College of Medical Sciences and GTB Hospital, Delhi, India

Pregnancy in chronic kidney disease: A case report

Priyanka Meena, Alpana Singh and Rajeshwari Kumari

DOI: https://doi.org/10.33545/gynae.2021.v5.i1a.785

Abstract
Pregnancy in chronic kidney disease is rare and often has poor maternal and fetal prognosis. We are reporting a case report where a multidisciplinary approach led to good maternal and fetal outcomes.

Keywords: Chronic kidney disease, good maternal, fetal prognosis

Introduction
Pregnancy in patients with chronic renal disease is rare due to numerous factors that impair fertility [1]. Chronic kidney disease is characterised in five stages. Perinatal complications, such as preterm labor, preeclampsia and fetal growth restriction (FGR) are increased for all stages [2-5]. In women with serum creatinine (SCR) above 2.5 mg/dl, the rate of preterm delivery is as high as 86%, mainly due to preeclampsia, which occurs in over 40% [5-7].
The degree of renal insufficiency, rather than the underlying etiology, is the primary determinant of outcome. Women who become pregnant with high SCR level, are more likely to have a decline in renal function, than women who do not become pregnant, for the same SCR level [8, 9]. Hypertension and degree of proteinuria are also among the most important predicting factors. Fifty percent of women with SCR >1.5 mg/dl have a significant decline in glomerular filtration rate (GFR) in late pregnancy or early postpartum, with 20% of them progressing to end-stage renal disease (ESRD) within 6 months after delivery [10, 11].

Case report
A 27-year-old female, G2P1L1, presented at our hospital at 31 weeks gestation, with CKD and hypertension, with a baseline SCR level of 3.1 mg/dl treated with enalapril and amlodipine. During pregnancy she was medicated with methyldopa, amlodipine, erythropoietin, vitamin D, vitamin B, ferrous sulfate and calcium.
Pregnancy was uneventful until 31 weeks gestation, when she was admitted with anemia, hypertension and worsening renal function. At admission SCR was 3.7 mg/dl, urea 108 mg/dl, and spot urine protein level was 215. She received one unit blood. At 36 completed weeks the patient was induced with cerviprime gel and patient delivered a male baby of body weight 2 kg vaginally.
At day 9 postpartum, she was discharged from the hospital, with SCR 3.6 mg/dl, urea 120 mg/dl. Hemodialysis was programmed on an outpatient basis.

Discussion
Although pregnancy in women with CKD is associated with a high rate of live births, it is usually complicated by preeclampsia and fetal growth restriction [1-3]. The higher the stage of CKD, the greater the probability of postpartum deteriorated renal function, with a significant proportion of women progressing to ESRD.
Pregnancy is a challenging prospect for the patients with CKD. Women with CKD have a low conception rate [12]. Even when fertilization is successful, the clinical outcome of pregnancy is unfavourable, with a greater frequency of spontaneous abortions and an increased risk of perinatal mortality [13-15]. This review article reported improved pregnancy outcome for patient with CKD. Furthermore, close attention to the management of anemia, blood pressure and volume control seemed to contribute to these promising results.
Most likely, several factors contributed to the positive result. Firstly, the patient was in a good general health at the time of conception. For example, the average level of serum albumin, which was measured serially during antenatal care, was maintained above 3.0 g/dl throughout the pregnancy.

Because albumin is considered to be representative of a patient's nutritional and inflammatory status, we can assume that the patient was able to achieve optimal dietary intake and an inflammation free status during gestation. This most likely contributed to the successful occurrence and maintenance of the pregnancy.

Well-controlled blood pressure could be another contributing factor. Most patients with CKD have chronic hypertension and tend to require multidrug treatment. Moreover, patients who require multiple medications for blood pressure control or those whose hypertension is poorly controlled are at an increased risk of adverse pregnancy outcomes, including maternal morbidity and fetal loss. However, in our patient, we maintained their blood pressure under control with single, low-dose antihypertensive therapy. This maintenance of the maternal blood pressure may have helped to stabilize the fetoplacental circulation.

We used a well-accepted approach toward the management of anemia. During a healthy pregnancy, erythrocyte volume increases by an average of 450 mL, and vigorous erythropoiesis leads to a large requirement for iron. In uncomplicated pregnancies, iron supplementation is sufficient to satisfy this requirement. However, because they are often deficient in EPO, our patient required supplementation with both iron and EPO to maintain acceptable hematologic parameters.

Finally, a multidisciplinary team approach that includes nephrologists, obstetricians, and neonatologists is likely to have a positive influence on pregnancy outcomes for women with CKD. Our active management of hypertension and anemia treatment was combined with frequent antenatal obstetric follow-up. In addition, new-born received immediate, intensive postnatal care. Pertinent patient information was shared among team members in advance, enabling the proper handling of adverse events, even in emergency situations.

In summary, our article describes successful pregnancy outcome in woman with advanced CKD. We cautiously conclude that these encouraging outcomes resulted from the maintenance of good general health before conception and intensive multidisciplinary management after pregnancy confirmation.

References

1. Nadeau-Fredette AC, Hladunewich M, Hui D, Keunen J, Chan CT. End-stage renal disease and pregnancy. Adv. Chronic Kidney Dis 2013;20:246e252.
2. Manisco G, Poti M, Maggiulli G, Di Tullio M, Losappio V, Vernaglione L. Pregnancy in end-stage renal disease patients on dialysis: how to achieve a successful delivery. Clin Kidney J 2015;8:293e299.
3. Alkhunaizi A, Melamed N, Hladunewich MA: Pregnancy in advanced chronic kidney disease and end-stage renal disease. Curr Opin Nephrol Hypertens 2015;24:252e259.
4. Jung JH, Kim MJ, Lim HJ, Sung SA, Lee SY, Kim DW *et al*. Successful pregnancy in a patient with autosomal dominant polycystic kidney disease on long-term hemodialysis. J Korean Med Sci 2014;29:301e304.
5. Sohn SW, Lee DY, Ahn SY, Chung IB, Cha DS, Kim DH. Two cases of successful pregnancy outcome with hemodialysis and continuous ambulatory peritoneal dialysis patient. Korean J Perinatol 1993;4:408e414.
6. Rhee SK, Kim SS, Jeong MS, Lee KW, Shin YT, Nam SL *et al*. A case of successful pregnancy and birth in chronic renal failure patient receiving hemodialysis. Korean J Nephrol 1993;12:476e480.
7. Haase M, Morgera S, Bamberg C, Halle H, Martini S, Hocher B *et al*. A systematic approach to managing pregnant dialysis patientsethe importance of an intensified haemodiafiltration protocol. Nephrol Dial Transplant 2005;20:2537e2542.
8. Barua M, Hladunewich M, Keunen J, Pierratos A, McFarlane P, Sood M *et al*. Successful pregnancies on nocturnal home hemodialysis. Clin J Am Soc Nephrol 2008;3:392e396.
9. Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL *et al*. Williams Obstetrics, 24th edition. New York: McGraw-Hill Education 2014,51e56.
10. Reddy SS, Holley JL. Management of the pregnant chronic dialysis patient. Adv Chronic Kidney Dis 2007;14:146e155.
11. Bagon JA, Vernaeve H, De Muylder X, Lafontaine JJ, Martens J, Van Roost G. Pregnancy and dialysis. Am J Kidney Dis 1998;31:756e765.
12. Okundaye I, Abrinko P, Hou S. Registry of pregnancy in dialysis patients. Am J Kidney Dis 1998;31:766e773.
13. Villa G, Montagna G, Segagni S. Pregnancy in chronic dialysis. A case report and a review of the literature. G Ital Nefrol 2007;24:132e140.
14. Levy A, Fraser D, Katz M, Mazor M, Sheiner E. Maternal anemia during pregnancy is an independent risk factor for low birthweight and preterm delivery. Eur J Obstet Gynecol Reprod Biol 2005;122:182e186.
15. Holley JL, Reddy SS. Pregnancy in dialysis patients: a review of outcomes, complications, and management. Semin Dial 2003;16:384e388.
16. Dr. Aruna Kumari T, Dr. Anil Kumar G. A Study of thyroid dysfunction in chronic kidney disease Patients in a tertiary Care Hospital-A Prospective study. Int J Adv Biochem Res 2020;4(1):20-26.
    DOI: 10.33545/26174693.2020.v4.i1a.43