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Letter to Editor

Succesfully Completed Twin Pregnancy of a Peritoneal Dialysis Patient

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Dear Editors,

Maintenance dialysis patients with end-stage renal disease rarely conceive, with annual incidences of 0.3–2.7% and successful multiple pregnancies rarer (1). Here, we want to present a rare case of a patient with end-stage renal disease (ESRD) having a successful twin pregnancy.

The 31-year-old female patient, who has been undergoing continuous ambulatory peritoneal dialysis (CAPD) for the past 1.5 years due to end-stage renal failure associated with focal segmental glomerulosclerosis, presented with an unplanned twin pregnancy of 7 weeks. This pregnancy is the patient's second, and her previous pregnancy from 3 years ago ended in stillbirth following preeclampsia.

The patient's blood pressure was regulated with 30 mg of nifedipine, and the daily urine volume was 1000 cc. In the laboratory tests, blood urea nitrogen (BUN) is 36 mg/dL, creatinine is 6.71 mg/dL, and hemoglobin is 10.3 g/dL, with no pathology detected in other tests.

She wished to go on with CAPD. Dialysis treatment was planned with 4 changes of 2000 cc dialysis solutions, including 3 sets of 1.36% and 1 set of 2.27% glucose. During follow-up, the patient did not require additional treatment beyond iron replacement and antihypertensive medication. As her pregnancy progressed, her exchanges caused mild pain. We successfully reduced the dialysis volume gradually from 2000 cc to 1200 cc and increased the frequency of changes gradually up to 8 times a day, thereby alleviating the patient's symptoms. During this process, her weekly Kt/V values ranged between 1.6 and 1.8. After 22 weeks, BUN and creatinine values increased. She experienced drainage issues and daily UF rate decline from 1000 cc to 500 cc. She refused to switch to hemodialysis (HD) despite our efforts. In this case, we continued the dialysis treatment with automated peritoneal dialysis (APD). We planned a nightly APD with solutions containing 2.27% glucose, involving 10 exchanges of 1000 cc each. Adequate dialysis was hardly maintained.

She needed an immediate cervical cerclage after a severe vaginal discharge and bleeding at 24 weeks. Ultimately, she was persuaded for HD. Until week 32, she was on a hemodialysis program, including 3 hours of hemodialysis and 1000-1500 cc ultrafiltration daily, for 6 days a week. During this process the patient's BUN and creatinine values regressed uncomplicatedly to the recommended levels for pregnant hemodialysis patients and the daily diuresis volume ranged between 400-500 cc (2). At that time she developed preeclampsia. As she had severe preeclampsia in her previous unsuccessful pregnancy, we offered emergent C/S.

Ultimately, after reaching 32 weeks and 6 days of gestation, she delivered two robust twins. As a precaution, both infants were monitored in the NICU for one day. Without complications, the mother and twins were discharged. After two weeks of HD, the patient returned to CAPD. In five years of follow-up, she received a live transplant and maintained 0.7 mg/dL creatinine with both children growing normally.

Maintenance of residual renal function (RRF) and continuous daily ultrafiltration are advantages of PD over HD. Pregnancy outcomes improve with these factors. Nevertheless, due to the reduced occurrence of pregnancy rates in women undergoing PD and the limited availability of data, the majority of authors and guidelines suggest transitioning to HD before conception or the first trimester (3).

Daily and extended hemodialysis schedules strain patients and healthcare institutions. Women with significant residual renal function (RRF) or who cannot quickly transition to intensive HD may benefit from preserving PD during part of the pregnancy or incorporating HD.

The optimal PD prescription during pregnancy depends on factors like RRF and tolerated dwell volume. In patients with decreased dwell volume, transitioning from CAPD to automated peritoneal dialysis (APD) with an increased number of exchanges can provide more optimal Kt/V values as such is our case. Published data provides diverse techniques. Several PD patients have successfully switched to HD in the last trimester. Occasionally, cases completing a whole pregnancy on PD have been described (4).

In conclusion, considering RRF, laboratory data and patient preference we believe a hybrid, individualized approach is the optimal strategy for pregnant PD patients. Our case serves as an example of successful hybrid dialysis treatment for pregnant PD patients, providing guidance in the management of this group of patients.

DECLARATIONS

Conflict of Interest Statement: The authors declares no conflicts of interest related to this letter.

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