

Pregnancy in women with nephrotic-range proteinuria

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Introduction

The adverse effects of chronic kidney disease (CKD) on pregnancy and pregnancy on renal function have been described, but the effect of severe proteinuria in early pregnancy is not known. The aim of this study was to evaluate the obstetric and renal outcomes of pregnant women with severe proteinuria manifesting in early pregnancy.

Methods

We retrospectively assessed the records of 550 women with renal disease who were cared for during pregnancy in Queen Charlottes and Chelsea hospital between January 2008 to October 2018 and identified women with nephrotic range proteinuria in early pregnancy, defined as protein to creatinine ratio (uPCR) of >300 mg/mmol, or +3 protein on urine dipstick analysis with a later uPCR of >300. Their records were reviewed and outcomes were compared to women with CKD and little or no proteinuria in early pregnancy.

Results

We identified 37 women with severe proteinuria and compared them with 62 women with CKD but who had mild or no proteinuria. The baseline eGFR and blood pressure in the groups were similar. There were significantly more women with a diagnosis of glomerular disease in the group with proteinuria. Of the proteinuric group, 8/37 (21%) presented in pregnancy with new onset renal disease.

The group with severe proteinuria had significantly higher rates of delivery by C-section, and higher rates of prematurity including severe prematurity (<34 weeks). They had lower average birth weight (BW), with an average BW of 2,213 gr (\pm 905) as opposed to 2,753 gr (\pm 720). In the proteinuric group, 10% of the babies were born with very low birth weight of <1,500 gr, as opposed to only 3% in the non-proteinuric group. Their renal outcomes were poorer, with a lower eGFR at 3 years and a higher rate of advanced CKD and renal replacement therapy.

In the women with proteinuria, the level of scarring on a recent renal biopsy was found to be a significant predictor of several poor outcomes, including premature birth and developing advanced kidney disease.

Conclusion

Severe proteinuria early in pregnancy is associated with lower birth weight, greater prematurity and poorer renal function in the long term. Physicians treating these women must be aware that they are at a higher risk of complications than women with renal disease without severe proteinuria.