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Diabetic Nephropathy in Pregnancy: An Overview

Tae Camyung*

Department of Women and Child Health, University of Leipzig, Leipzig, Germany

***Corresponding author:** Tae Camyung, Department of Women and Child Health, University of Leipzig, Leipzig, Germany, E-mail: taecamyung17@gmail.com

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About the Study

With the rising prevalence of diabetes among women of reproductive age, the incidence of diabetic nephropathy in pregnancy is projected to climb. There are multiple well-defined stages of renal impairment in diabetic patients, and women with diabetes can be divided into three categories: (1) those with a preserved GFR and normal micro-albuminuria (urinary albumin excretion of less than 20 mg/d); (2) those with a preserved GFR and micro-albuminuria (urinary albumin excretion of 30 to 300 mg/d); and (3) those with overt nephropathy (urinary albumin excretion of more than 300 mg/d).

When overt nephropathy develops, renal function frequently deteriorates over time, leading to ESRD in many cases. Diabetic women who do not have microalbuminuria or an increased serum creatinine level may have subclinical renal impairment. Controlling blood sugar, controlling hypertension, and using angiotensin-converting enzyme inhibitors or angiotensin receptor blockers can all help to reduce or stop the progression of diabetic renal disease in non-pregnant people. Unfortunately, both ACE inhibitors and ARBs are contraindicated in pregnancy due to their teratogenic effects on the foetus, which include oligohydramnios, IUGR, hypoplasia of the calvaria, renal dysplasia, anuria, renal failure, and death.

Renal function declines during pregnancy in women who have overt nephropathy. It needs to be seen whether this is the natural course of their disease or a pregnancy-induced acceleration of renal impairment. In women with overt diabetic nephropathy, several studies have sought to uncover prognostic variables that enhance the risk of renal function degradation. The prognosis is often poorer the more serious the condition is and the earlier it develops during pregnancy.

GFR less than 70 mL/min prior to pregnancy, less than 90 mL/min prior to 20 weeks' gestation, urinary protein excretion greater than 1 g/d prior to 20 weeks' gestation, serum creatinine greater than 1.4 mg/dL, and failure to demonstrate an increase in GFR during the first and second trimesters have all been linked to an increased risk of permanent renal function decline during pregnancy. The decrease of renal function in these individuals could be attributed to worsening hypertension and superimposed preeclampsia. In women who have these risk factors, appropriate counselling regarding the danger of persistent renal impairment during pregnancy should be provided.

Pregnancy has not been found to have a deleterious influence on the onset and long-term progression of renal disease in women with diabetes who do not have overt nephropathy. Women with pregnancies throughout the follow-up period were no more likely than women without pregnancies to acquire micro-albuminuria or overt nephropathy in the Diabetes Control and Complications Trial, which included a significant number of participants without nephropathy or micro-albuminuria at baseline. Pregnancy had no effect on the pace of renal function decrease or the progression of diabetic renal disease in three smaller investigations. Diabetic women who have preeclampsia but do not have overt nephropathy may be more prone to develop nephropathy and ESRD in the future.