



ASSOCIATION BETWEEN PREGNANCY AND LONG-TERM RENAL OUTCOME IN AUTOSOMAL DOMINANT POLYCYSTIC KIDNEY DISEASE

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BACKGROUND

In Autosomal Dominant Polycystic Renal Disease (ADPKD) patients, renal cysts expansion result in kidney enlargement and renal dysfunction progress gradually. So it is difficult to know the pregnancy course because patients may not have a diagnosis of ADPKD at the childbearing age. There are a few large-scale studies about the pregnancy course of patients with ADPKD, these study reported that the incidences of gestational hypertension and chronic hypertension are high, but preeclampsia is controversial. In many patients with ADPKD, kidney dysfunction is not clinically apparent until forty or fifty years old. So it takes long-time follow-up to investigate the relationship between pregnancy and renal outcome, and the predictors of long-term renal outcome related with pregnancy remain unknown.

OBJECTIVES

The aim of this study is to analyze the relationship between pregnancy course and long-term renal outcomes in ADPKD patients.

METHODS

112 patients with ADPKD who have childbirth experience were enrolled in this retrospective study. Preeclampsia is defined as new onset of hypertension and either proteinuria or end-organ dysfunction after 20 weeks of gestation in a previously normotensive woman. Gestational hypertension is hypertension without proteinuria or other signs/symptoms of preeclampsia that develops after 20 weeks of gestation. Chronic/preexisting hypertension is defined as systolic pressure ≥ 140 mmHg and/or diastolic pressure ≥ 90 mmHg that antedates pregnancy or is present before the 20th week of pregnancy (on at least two occasions) or persists longer than 12 weeks postpartum. gestational proteinuria is the presence of protein in urine during or under the influence of pregnancy in the absence of hypertension, edema, renal infection, or known intrinsic renovascular disease. Low birth weight infant is defined as a birth weight of less than 2,500 g regardless of gestational age. End Stage Renal Disease (ESRD) is defined as induction of dialysis. Associations with ESRD were evaluated by Cox proportional-hazards regression.

RESULTS

	N=112
Age at child birth, yr	26.5 \pm 4.3
Parity	2.5 \pm 0.9
Preeclampsia (%)	6 (5.4)
Gestational hypertension (%)	9 (8)
Chronic/preexisting hypertension (%)	8 (7)
Gestational proteinuria (%)	14 (13)
gestational week at birth, week	39.3 \pm 1.8
Birth weight, g	3064 \pm 482
Low birth weight infant (%)	8 (7)
Follow-up, months	27.4 \pm 11.0

Table1. Characteristics

Parameter	Univariate			Multivariate		
	HR	95%CI	p value	HR	95%CI	p value
Age at child birth	1.10	1.01-1.18	0.02	1.07	0.98-1.17	0.12
Parity	0.84	0.60-1.18	0.32	0.89	0.63-1.28	0.54
Preeclampsia	0.99	0.36-2.75	0.99	1.12	0.39-3.20	0.83
Gestational hypertension	1.59	0.68-3.71	0.28	1.92	0.81-4.58	0.14
Chronic/preexisting hypertension	8.68	3.30-22.9	<0.01	7.98	2.88-22.1	<0.01
Gestational proteinuria	1.07	0.48-2.37	0.87	1.00	0.413-2.425	1.00

Table2. Univariate and multivariate analysis of factors that contribute to ESRD in 112 patients.

Age at childbirth and chronic/preexisting hypertension were each associated with ESRD in univariate analysis. In multivariate analysis using Cox's regression model, presence of chronic/preexisting hypertension was an independent risk factor for the development of ESRD and preeclampsia was not associated with ESRD.

CONCLUSIONS

Incidence rates of preeclampsia in general population is range from 2-5%, so the incidence of preeclampsia in ADPKD patients (5.4%) was not higher remarkably. A strong association between ESRD and chronic/preexisting hypertension of pregnancy was determined in ADPKD patients. Preeclampsia was not a risk factor of ESRD.

