



ARE WOMEN WITH A SOLITARY KIDNEY AT RISK FOR ADVERSE PREGNANCY OUTCOMES?



Authors Giorgina Barbara Piccoli¹, Rossella Attini², Gianfranca Cabiddu³, Silvia Parisi², Marta Nazha¹, Federica Neve Vigotti¹, Martina Ferraresi¹, Marilisa Biolcati²,

¹University of Turin, Clinical and Biological Sciences, Turin, ITALY, ²University of Turin, Obstetrics Department of Surgical Sciences, Turin, ITALY, ³Nephrology Brotzu Hospital Cagliari Italy, Renal Pathology, Cagliari, ITALY.

Introduction and aims:

Kidney donors are the prototype of “healthy single kidney patients”.

The assessment of the risks of kidney donation has tremendous social, ethical, economical and clinical implications, in particular in Countries in which living donation is the predominant kidney transplantation; hence the controversy on considering kidney donors as CKD patients. Recent data suggest a higher risk for Preeclampsia in female donors. Less is known on the risks faced by women with single kidney of different pathogenesis, and having a single kidney is often overlooked as a risk factor in pregnancy.

Methods:

Analysis of patients with a single kidney in a large multicentric cohort of pregnant CKD patients, gathering 731 pregnant patients with CKD (in 2000-2013); 53/731 had a single kidney (anatomical or functional). The data of CKD stage 1 with single kidney were discussed with respect to 835 low-risk pregnancies gathered in the same Centers in the same period (TOCOS cohort: Torino Cagliari Observational Study)

Results:

Single kidney accounted for 7% of the overall referred CKD patients; On overall 265 CKD stage 1 pregnancies, 29 were singleton deliveries in CKD stage 1 women with anatomical or functional single kidney. Considering only CKD stage 1, pregnancy outcomes differed significantly from the control low-risk pregnancies, with significantly higher risk for pre-term delivery in mothers with a single kidney (Odds ratio: 8.091 (3.576-18.305)).

	Single kidney N: 29	Low-risk controls N: 835	P
Age (start of pregnancy) median (IQR)	32 (28.5-35)	30 (26-34)	0.069
Parity (% primiparous)	51.7%	58.1%	0.624
Caucasian (%)	93.1%	86.0%	0.413
Educational level (% >8 th grade)	68.0%	63.8%	0.829
Hypertensive at referral (%)	0	0	-
Proteinuria >=0.3 g/day before pregnancy	6.9%	0	-
Caesarean section (%)	31.0%	27.1%	0.795
Gestational weeks: median (IQR)	38 (36-39)	39 (38-40)	<0.001
Pre-term delivery < 37 weeks n (%)	34.5%	6.1%	<0.001
Early pre-term delivery <34 weeks n (%)	3.4%	1.0%	0.266
Birth weight (g) : median (IQR)	2926 (2575-3260)	3260 (2970-3550)	<0.001
Small for gestational age n (%) < 10 ^o centile	10.3%	8.8%	0.771
Need for neonatal intensive care Unit n (%)	3.4%	1.8%	0.429
Pregnancy induced hypertension or Preeclampsia	10.3%	6.8%	0.413

	Caesarean sections N. 235		Preterm delivery <37 weeks N. 61		Need for NICU N. 16	
	Univariate OR (95% CI)	Multivariate OR (95% CI)	Univariate OR (95% CI)	Multivariate OR (95% CI)	Univariate OR (95% CI)	Multivariate OR (95% CI)
Low-risk Controls	1	1	1	1	1	1
CKD stage 1	1.213 (0.544-2.702)	1.143 (0.511-2.556)	8.091 (3.576-18.305)	7.736 (3.407-17.563)	1.917 (0.245-15.023)	1.784 (0.226-14.070)
Maternal age ≤30 years	1	1	1	1	1	1
Maternal age >=30 years	1.436 (1.057-1.950)	1.413 (1.035-1.929)	1.365 (0.799-2.334)	1.241 (0.714-2.156)	1.770 (0.609-5.138)	1.757 (0.595-5.190)
Non Caucasian	1	1	1	1	1	1
Caucasian	1.250 (0.795-1.967)	1.119 (0.705-1.777)	1.501 (0.632-3.568)	1.304 (0.537-3.166)	1.110 (0.249-4.948)	0.939 (0.206-4.287)



Conclusions:

Our data support considering women with single kidney at risk for adverse pregnancy outcomes and in particular of preterm delivery.

References:

- Garg AX, Nevis IF, McArthur E, et al; the DONOR Network. Gestational Hypertension and Preeclampsia in Living Kidney Donors. N Engl J Med. 2014 Nov 14. (e-pub ahead of print)
- Piccoli GB, Attini R, Vasario E, et al. Pregnancy and chronic kidney disease: a challenge in all CKD stages. Clin J Am Soc Nephrol. 2010 May;5(5):844-55.
- Piccoli GB, Cabiddu G, Attini R, et al. Risk of Adverse Pregnancy Outcomes in Women with CKD. J Am Soc Nephrol in press
- Fischer MJ, Lehnerz SD, Hebert JR, Parikh CR. Kidney disease is an independent risk factor for adverse fetal and maternal outcomes in pregnancy. Am J Kidney Dis. 2004 Mar;43(3):415-23.
- Rosenbaum L. Communicating Uncertainty - Ebola, Public Health, and the Scientific Process. N Engl J Med. 2014 Nov 13.