

EVALUATION OF GLOMERULAR FILTRATION RATE IN CHILDREN FROM MOTHERS WITH TRANSPLANTED KIDNEY

Gordana Miloševski-Lomić¹, Višnja Ležaić^{2,3}, Dragana Radivojević², Mirjana Kostić^{1,3}, Dušan Paripović¹, Amira Peco-Antić^{1,3}

1. University Children's Hospital, Belgrade, Serbia; 2. Clinical Centre of Serbia, Belgrade, Serbia; 3. Medical Faculty, University of Belgrade, Belgrade, Serbia

OBJECTIVES

- Little is known about kidney function in children born in families in which mother received kidney transplant due to end stage kidney disease (ESKD).
- Early identification of impairment of kidney function in those children is very important.
- The aim of our study was to investigate renal function using cimetidine protocol in children age >6 years old, delivered by mothers with transplanted kidney.**

METHODS

- Renal function was determined before and after 2.5 days of a meat-free oral protein load (OPL) and cimetidine pretreatment in 8 children of mothers who underwent kidney transplantation (4 girls and 4 boys, age 7-25 years; mean±SD, 14.5±6.02). Cimetidine was given during 48-h prior to the study at a daily dose of 20 mg/kg, while they had been on a diet free of meat, fish and fowl.
- Assessment of renal function : endogenous creatinine clearance (CCr), iohexol GFR (mGFR) serum creatinine (sCr), cistatin C and urinary protein excretion (PRT) and albuminuria
- Blood pressure was evaluated using office and ambulatory blood pressure during a 24-h period. Hypertension was defined as mean systolic and/or diastolic BP above 95 percentile, according to sex and height. Office blood pressure was measured by auscultation with appropriate cuff size.
- Uroflowmetry with echosonography were used to assess the urinary bladder function.

Perinatal period

- IS: Cyclosporine A + Azathioprine + Prednisone
- Mean period from kidney transplant to the pregnancy= 59.5 months
- Mean duration of pregnancy 38 GW
- Arterial hypertension during pregnancy in 50%
- Perinatal hypoxic encephalopathy in 2 newborn

Data on subjects

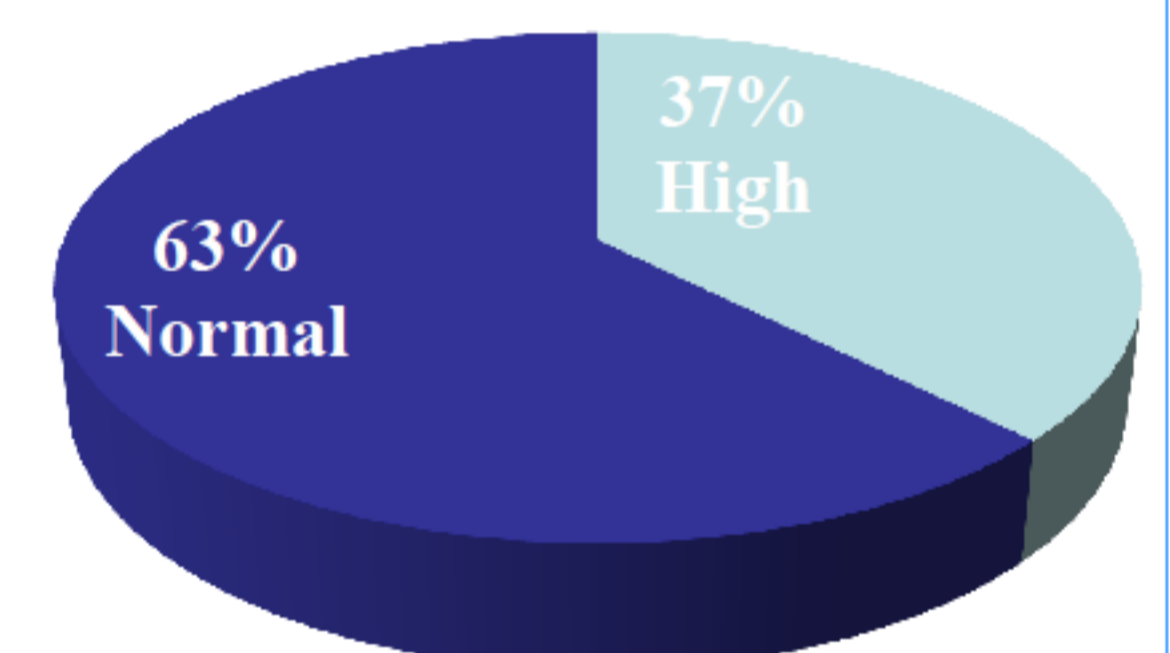
Mother	Child					
Date of kidney Tx	Date of birth	Sex	BMI	Percentile	comment	
24.08.1994.	1	25.01.2000.	M	25.7	95	Obese
17.03.1998	2	25.11.2004.	F	12.33	<3	Underweight
11.01.1989.	3	02.03.1992.	F	20.34		Normal
24.04.1992.	4	02.11.1995.	M	26.4	87	Overweight
20.03.1995	5	23.07.1998.	M	19.34	32	Normal
08.02.1996.	6	07.09.2004.	M	14.9	16	Normal
19.12.1996.	7	11.05.1999.	F	18.9	41	Normal
02.04.1985.	8	25.12.1987.	F	22.4		Normal

At the time of the study:

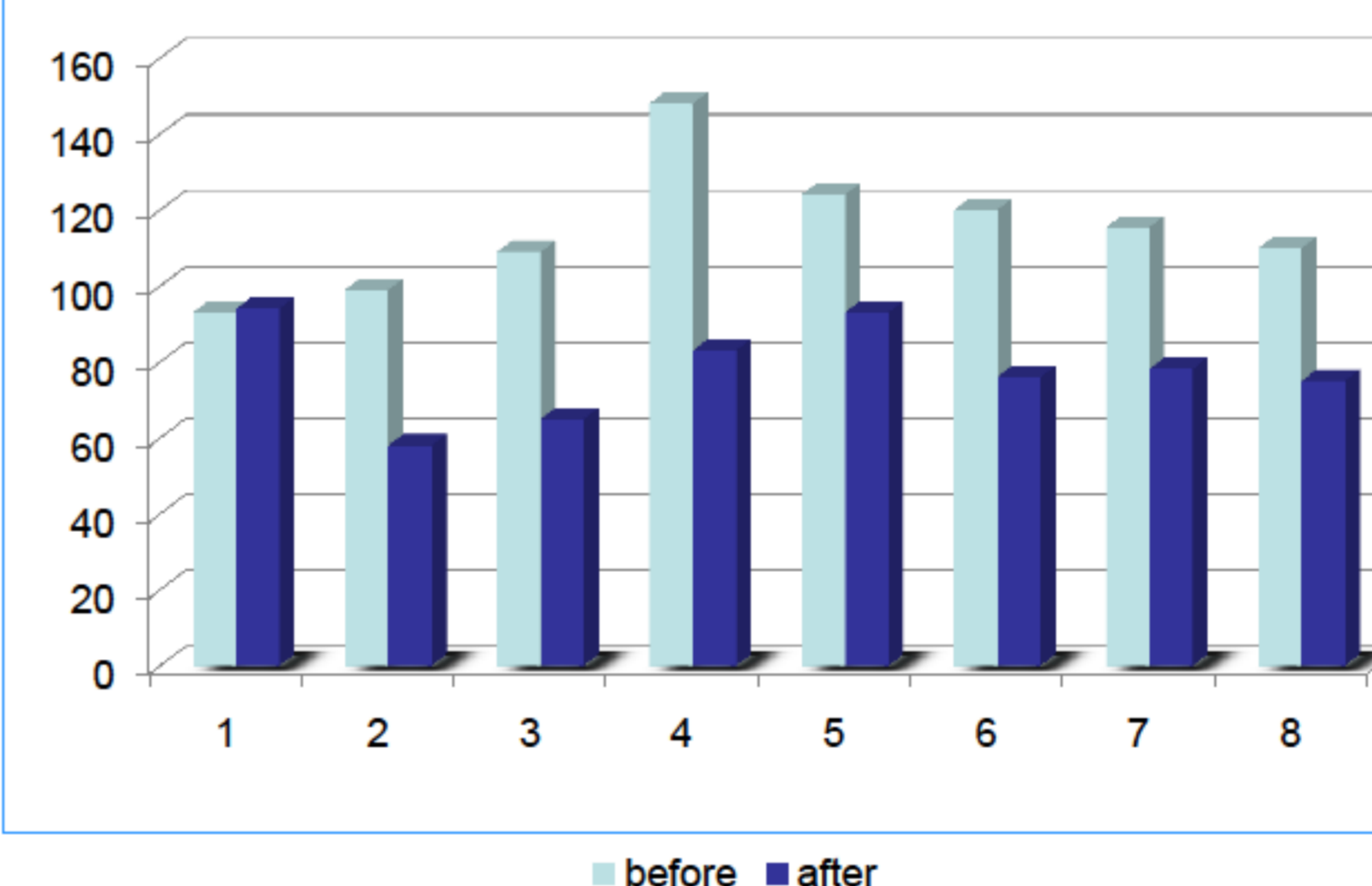
- All children were normally developed and nourished
- Renal morphology was normal
- Voiding dysfunction was found in 37.% of children.
- All of children had normal blood pressure

RESULTS

	Indices of kidney function				Text
	Cist C	CCr ml/min/1.73m ²	PRT/uCr g/mmol	mGFR ml/min/1.73m ²	
1	0,80	93	0,35	97	
2 f	0,64	99	0,19	111	
3 f	0,51	109	0,06	113	
4	0,60	148	0,11	108	
5	0,62	124	0,14	59	
6	0,59	120	0,09	127	
7 f	0,56	115	0,12	109	
8 f	0,51	110	0,06	110	



High albuminuria was presented in three subjects



Creatinine clearance before and after cimetidine

CONCLUSIONS

This pilot study highlights the potential risk of renal impairment in children born from transplanted mothers. Further studies are required but until then, careful monitoring of these children is important.

