

Risk factors in venous thrombosis of renal grafts from deceased non heart-beating donors

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Introduction

- New indications for organ transplantation combined with a stagnating number of available donor grafts have severely lengthened the waiting list.
- To decrease the waiting list, we promote live donation and use kidneys to expand transplant programmes. This programmes include grafts from non heart-beating donors (NHBD)
- Kidneys from NHBD may have higher rate of non primary renal function. In our hospital we found twice graft venous thrombosis in kidney from NHBD (8%) vs heart beating donors (4%).

Aims

- To identify risk factors that can participate graft venous thrombosis
- To analyze if a high resistance index (RI ≥ 0.8), measured by Doppler ultrasound can be a predictor sign of venous thrombosis.
- To analyze if early anticoagulation may decrease graft loss associated with venous thrombosis in select patients and to detect anticoagulation complications.

Methods

- We reviewed 227 patients who received a renal transplant from non heart-beating donor during the period 2005-2012
- In November 2009, we began prophylactic anticoagulation politic based on RI. We used preventive anticoagulation if RI was ≥ 0.8 measured by Doppler ultrasound.
 - Group I : 88 patients were transplanted since July 2005 to October 2009
 - Group II: 139 patients were transplanted since November 2009 to August 2012

Results

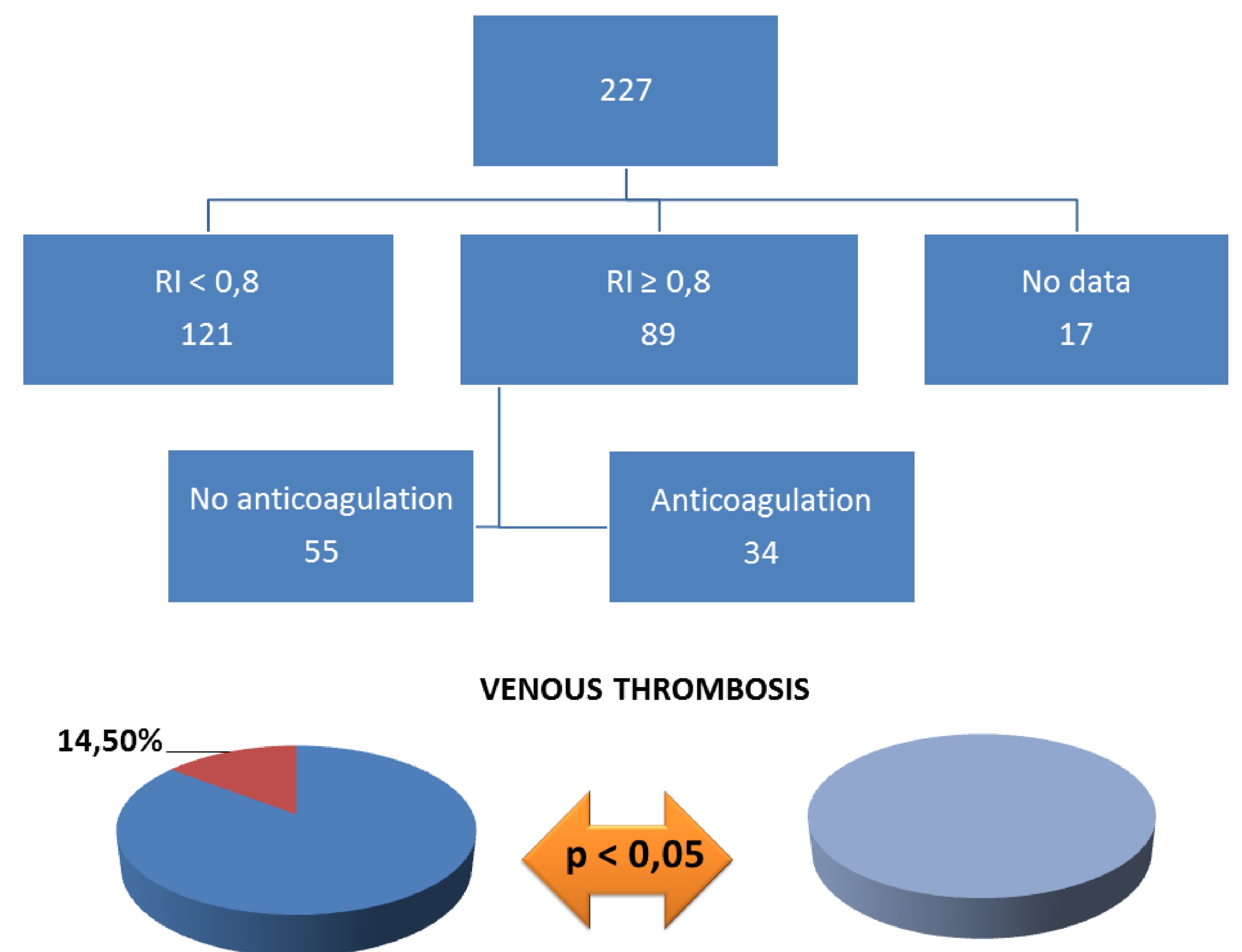
	GROUP I : 88	GROUP II: 139	p
RECIPIENTS			
Age (years)	45,6 \pm 11,2	49,4 \pm 11,6	p<0,05
Male	55,7%	64%	ns
First transplant	94,3%	94,2%	ns
Hyperimmunized	1,1%	0,7%	ns
HLA mismatches	4,2 \pm 1,2	4,7 \pm 1	<0,01
Cold ischemia time (minutes)	879,1 \pm 308,8	701,1 \pm 265,5	<0,01
DONORS			
Age (years)	38,3 \pm 9,7	46,9 \pm 10,2	<0,01
Male	90,9%	84,9%	ns
Weight (kilograms)	85,1 \pm 13,7	78,2 \pm 11,2	<0,01
Creatinine (mg/dl)	1,1 \pm 0,3	1,1 \pm 0,4	ns
IMMUNOSUPPRESSION			
Antitimocitic globuline	83%	96,4%	< 0,01
Tacrolimus	95,5%	99,2%	ns
Mycofenolate	88,6%	92,9%	ns

Results...

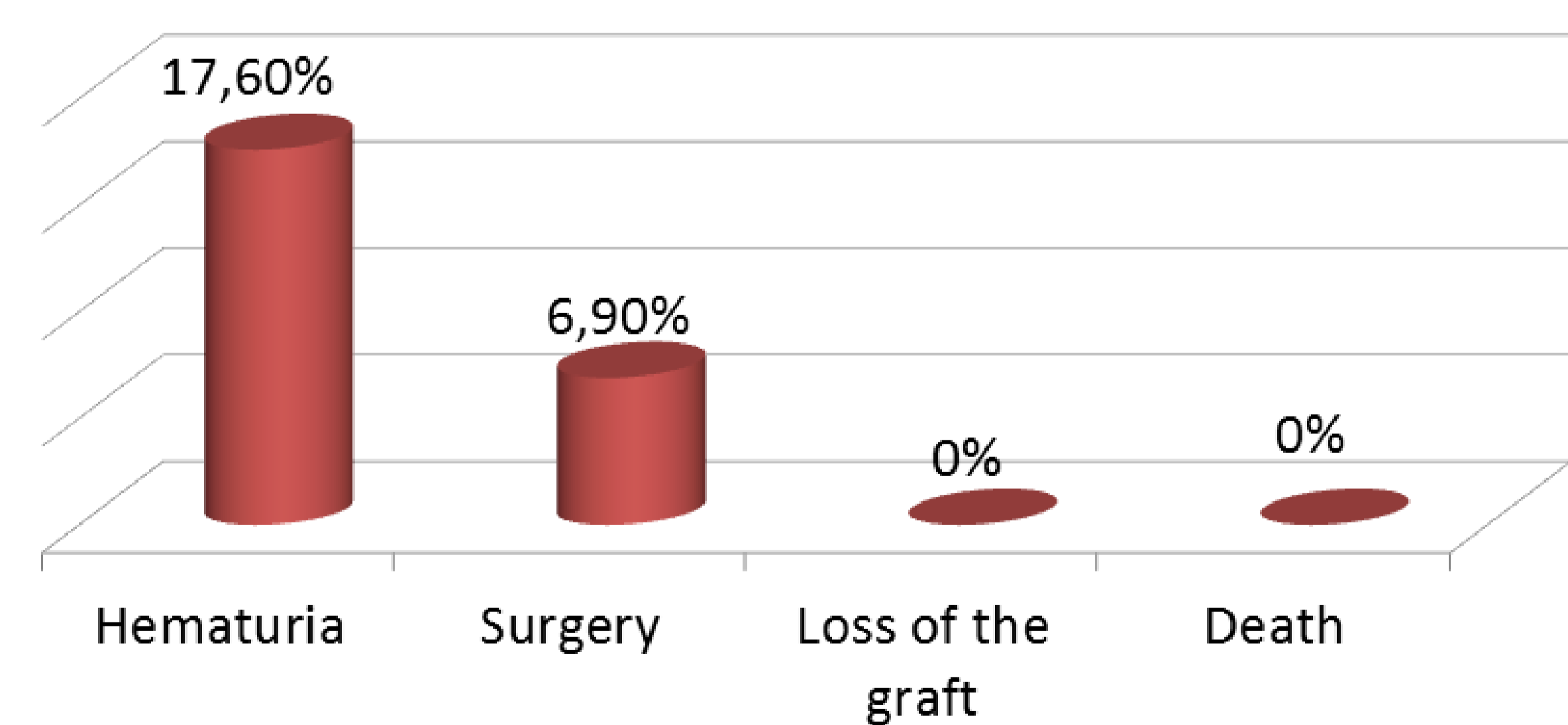
	GROUP I : 88	GROUP II: 139	p
RESULTS			
Primary graft function	14,8%	15%	ns
Acute tubular necrosis (days)	13,6 \pm 5,8	13,5 \pm 7,3	ns
RI measured by doppler	0,7 \pm 0,1	0,7 \pm 0,1	ns
RI High	35,2%	41,7%	ns
Loss of graft	11,4%	5%	ns
Anticoagulation	0%	26,6%	<0,01
Venous thrombosis	8%	0%	<0,01
Acute rejection	12,5%	10,8%	ns
Receptor survival	98,9%	100%	ns
Hematuria/Surgery/Transfusion	6,8%/8%/13,6%	10,8%/2,9%/28,8%	ns/ns/p<0,01

- In mutivariate analysis, less use of antitimocitic globulin treatment was the only risk factor associated with venous thrombosis (p 0,03 HR 5,2 IC 1,1-23,8)

CLASIFICATION OF THE GRAFTS ACCORDING TO RESISTANCE INDEX



COMPLICATIONS OF ANTICOAGULATED PATIENTS



Conclusions

- A careful choice of donor, reduced cold ischemia time and use antitimocitic globuline may avoid venous thrombosis in grafts from NHBD.
- In renal transplants from NHBD, IR measured by Doppler ultrasound may identify grafts with high risk for development of venous thrombosis. Use of anticoagulation in grafts with IR $\geq 0,8$ may decrease the rate of venous thrombosis.
- Prophylactic anticoagulation in these receptors is safe.

