

# FUNCTIONAL PROFILE, THROMBOSIS RATE AND CUMULATIVE PATENCY OF ARTERIOVENOUS FISTULAS (AVF) VERSUS GRAFTS (AVG) FOR HEMODIALYSIS (HD): A FIVE-YEAR PROSPECTIVE STUDY

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## INTRODUCTION AND AIMS

The arteriovenous access (AVF, AVG) is the preferred vascular access (VA) in front of a central venous catheter. The aim of this study is to compare the blood flow rate ( $Q_A$ ), the incidence of thrombosis and the cumulative survival between AVF and AVG in prevalent HD patients undergoing VA surveillance for stenosis.

## METHODS

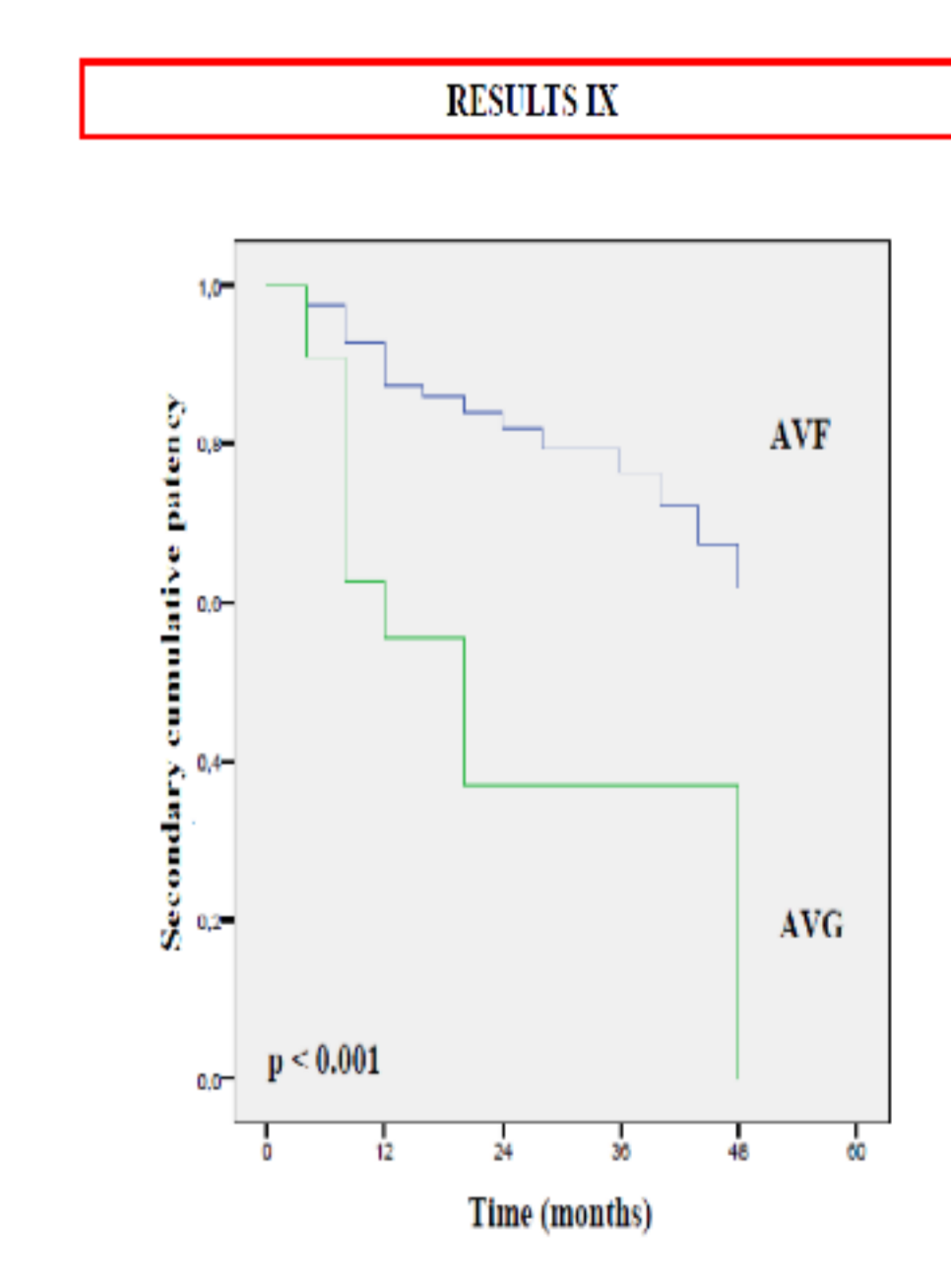
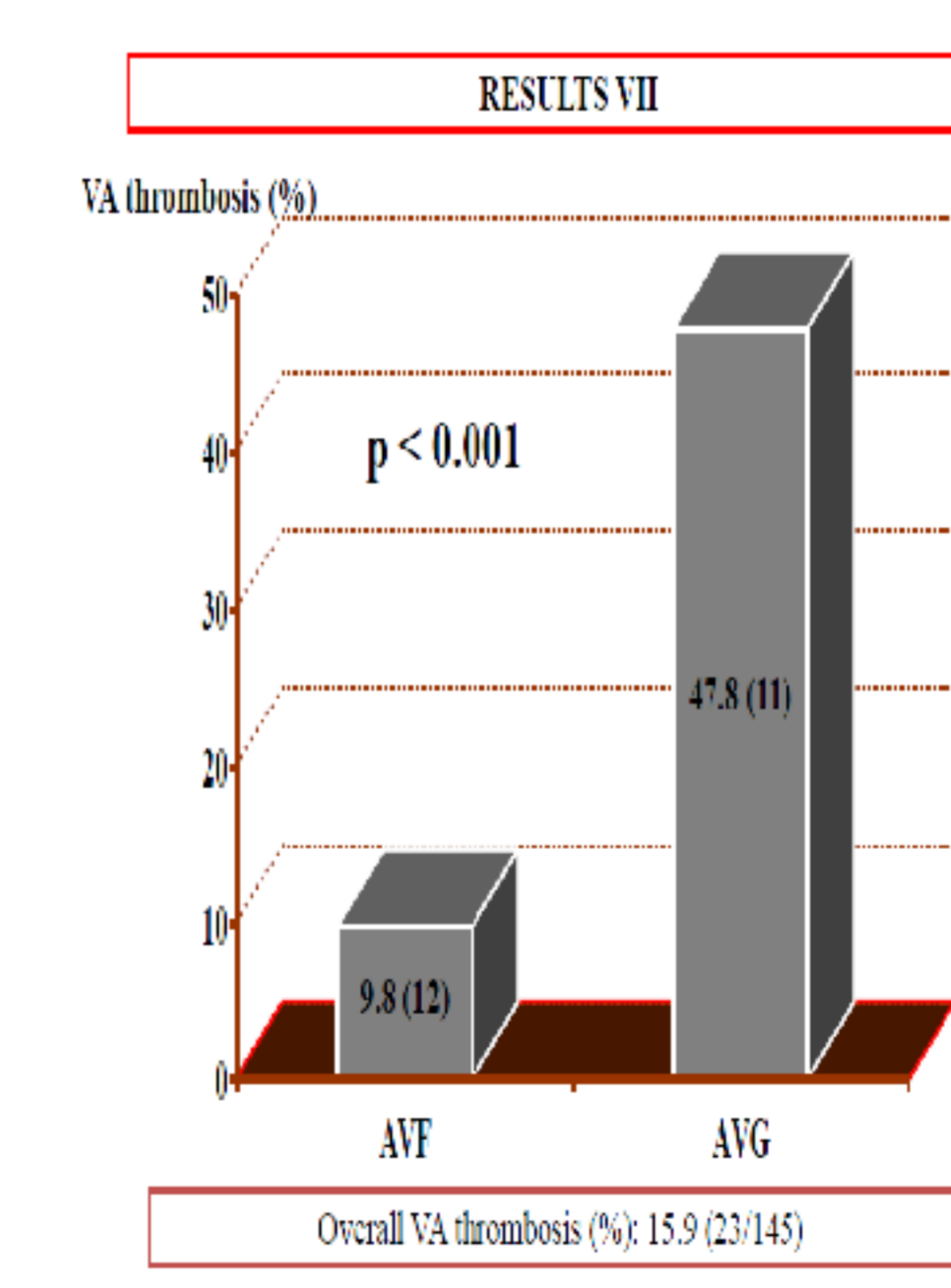
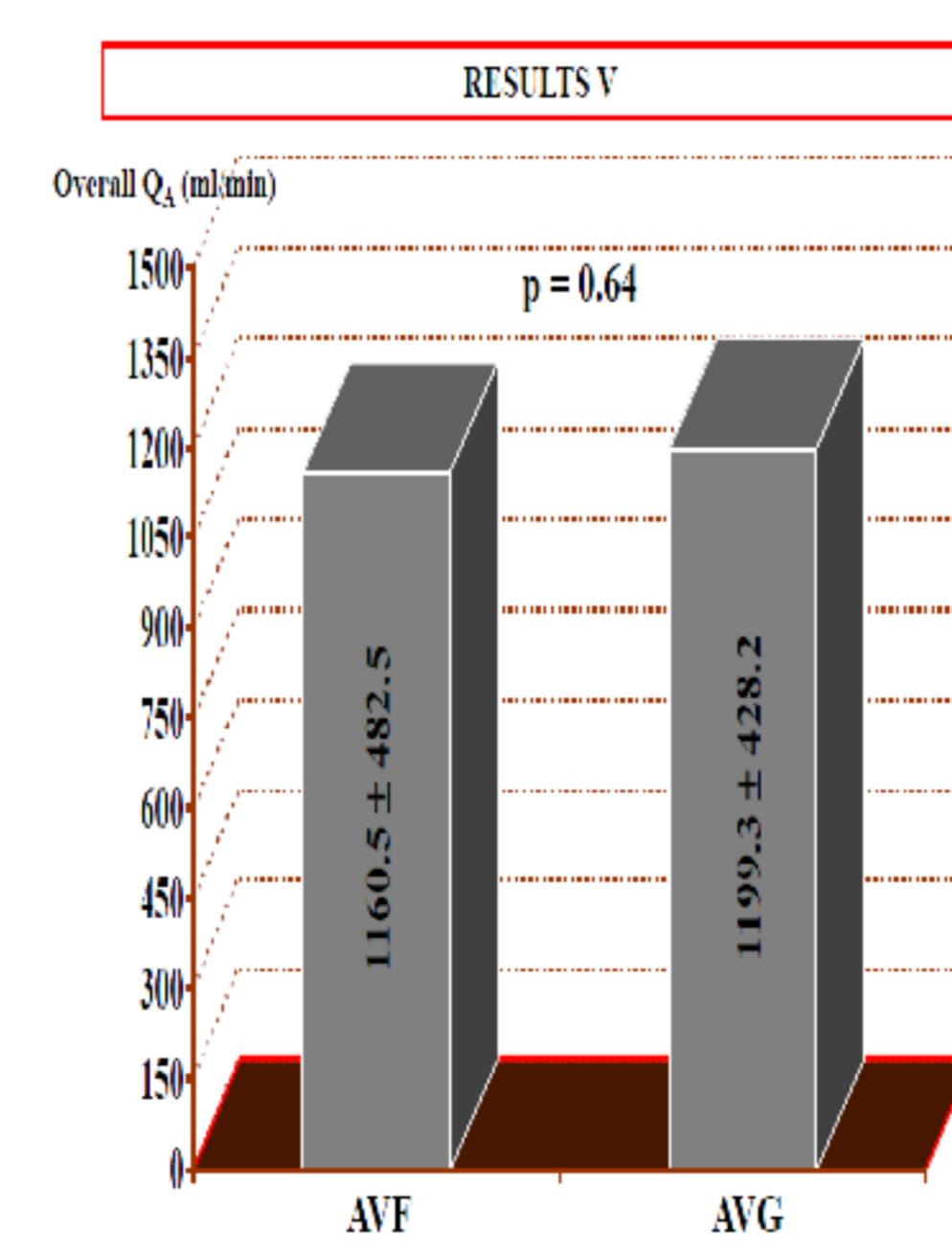
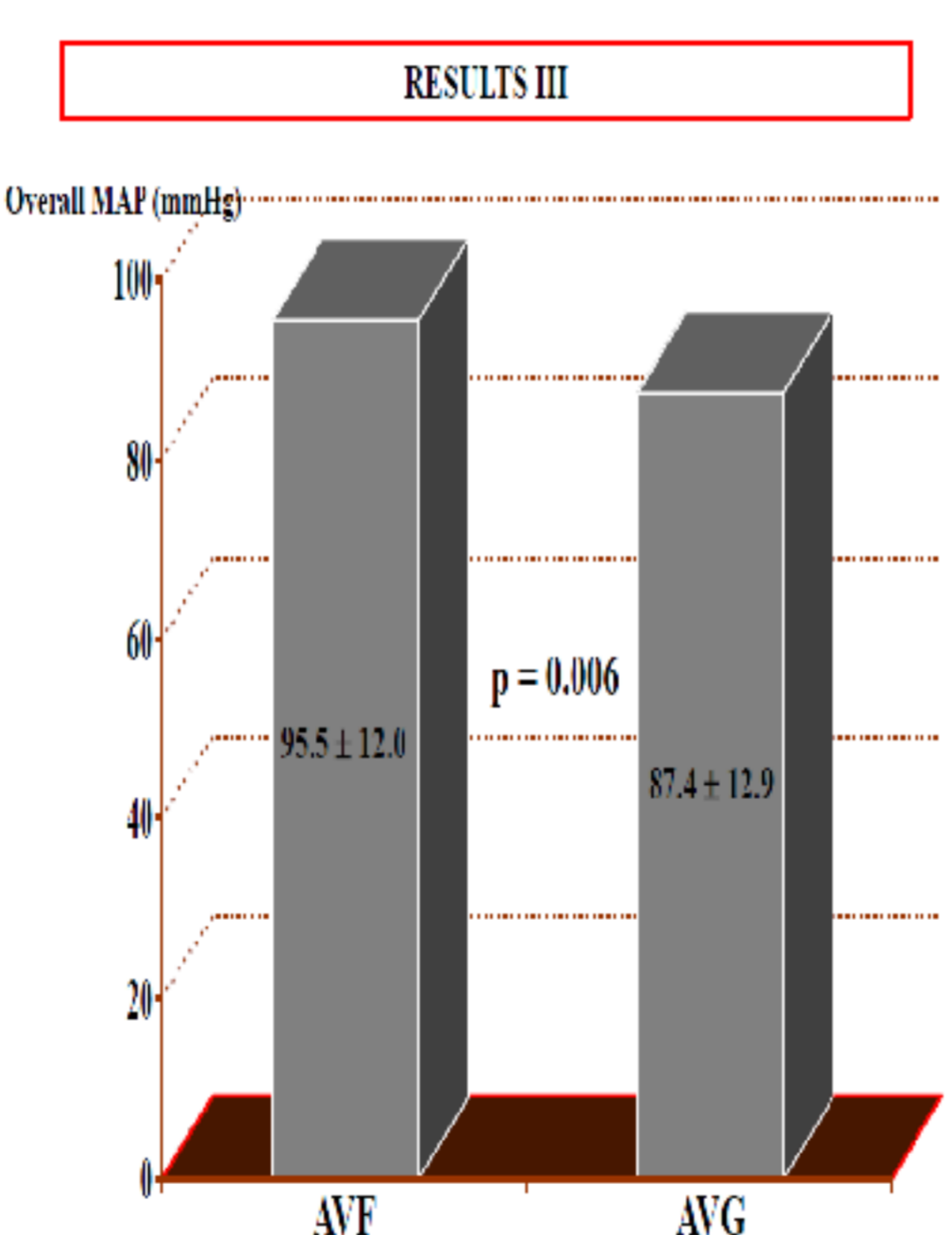
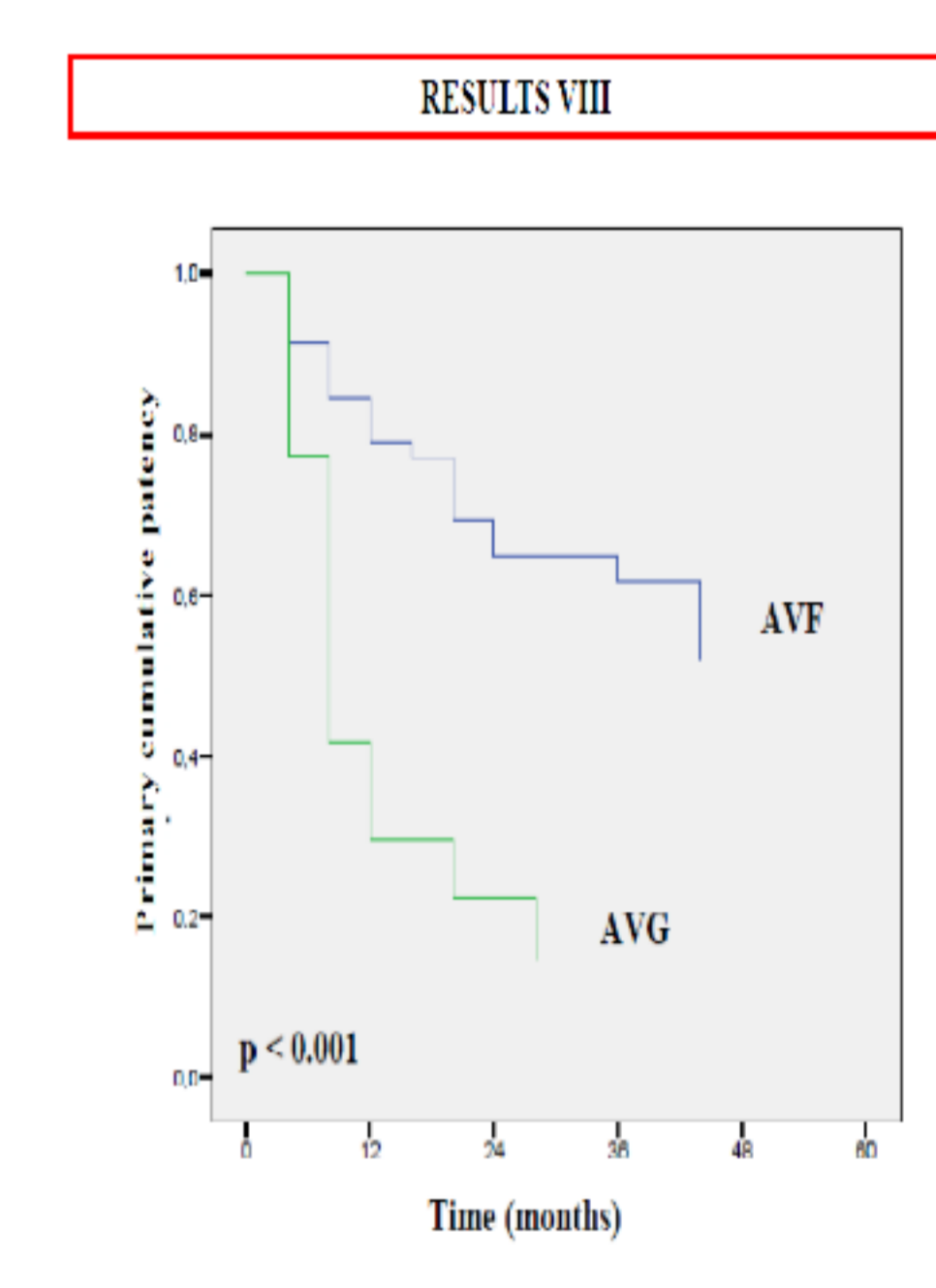
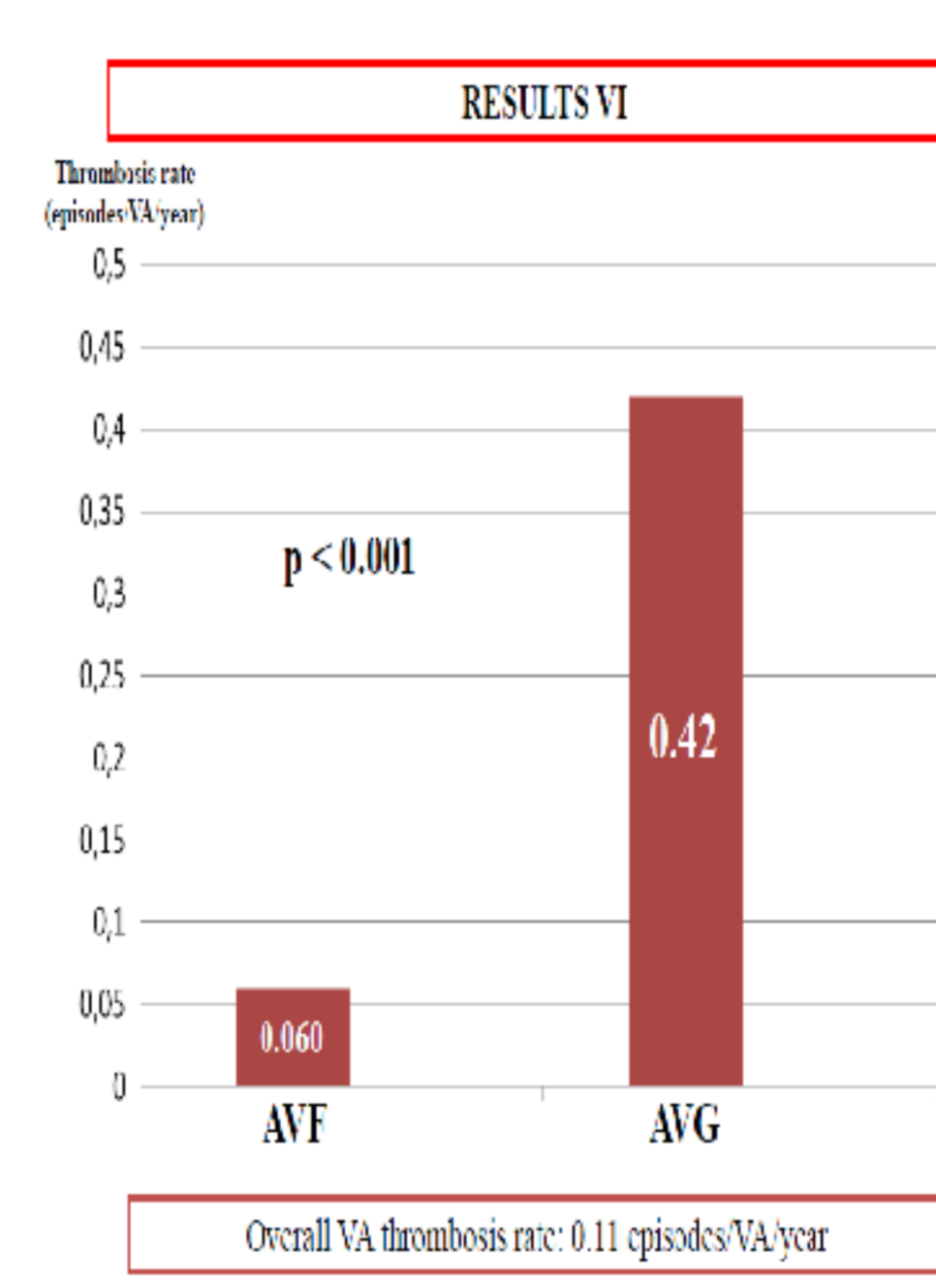
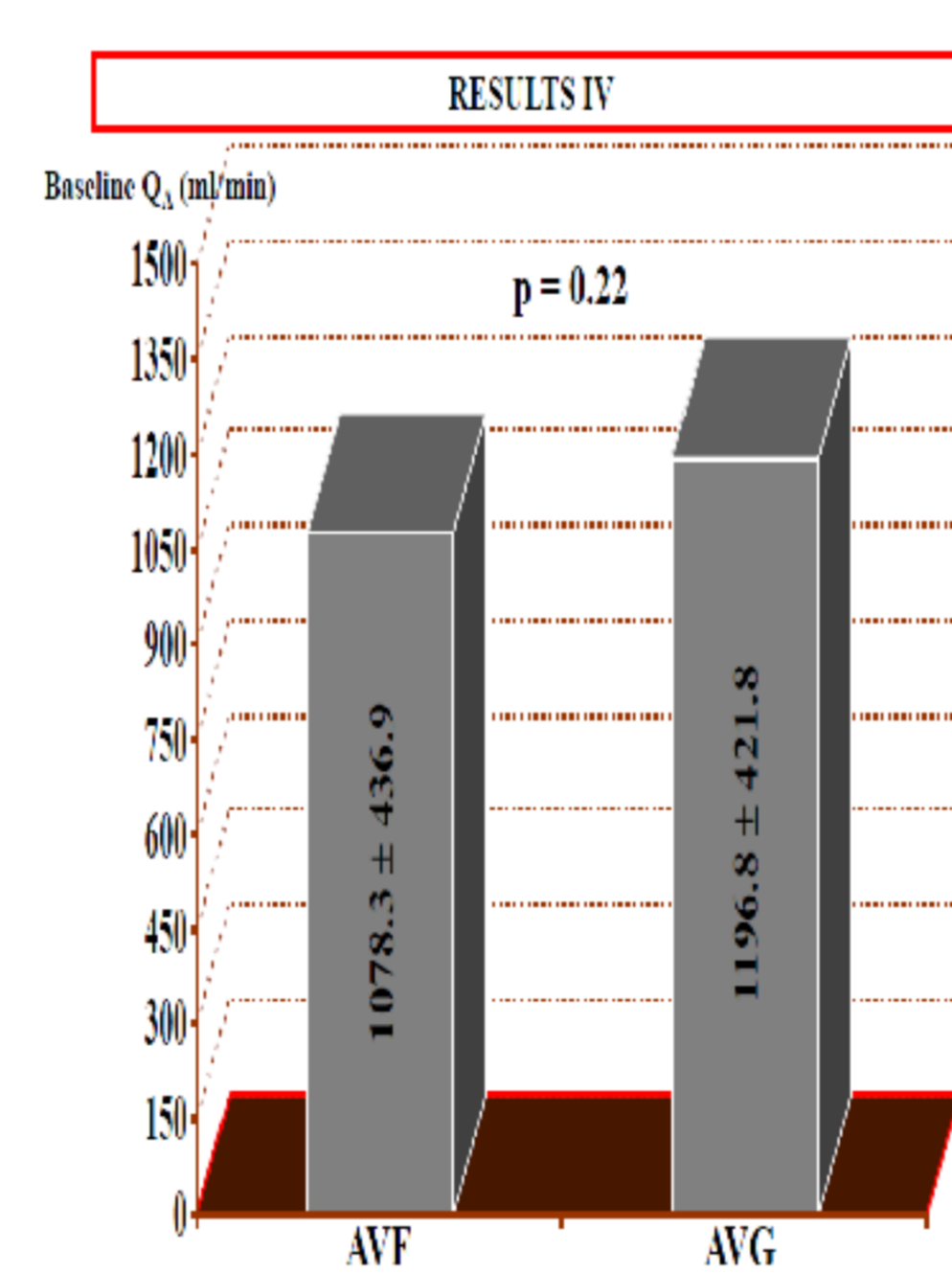
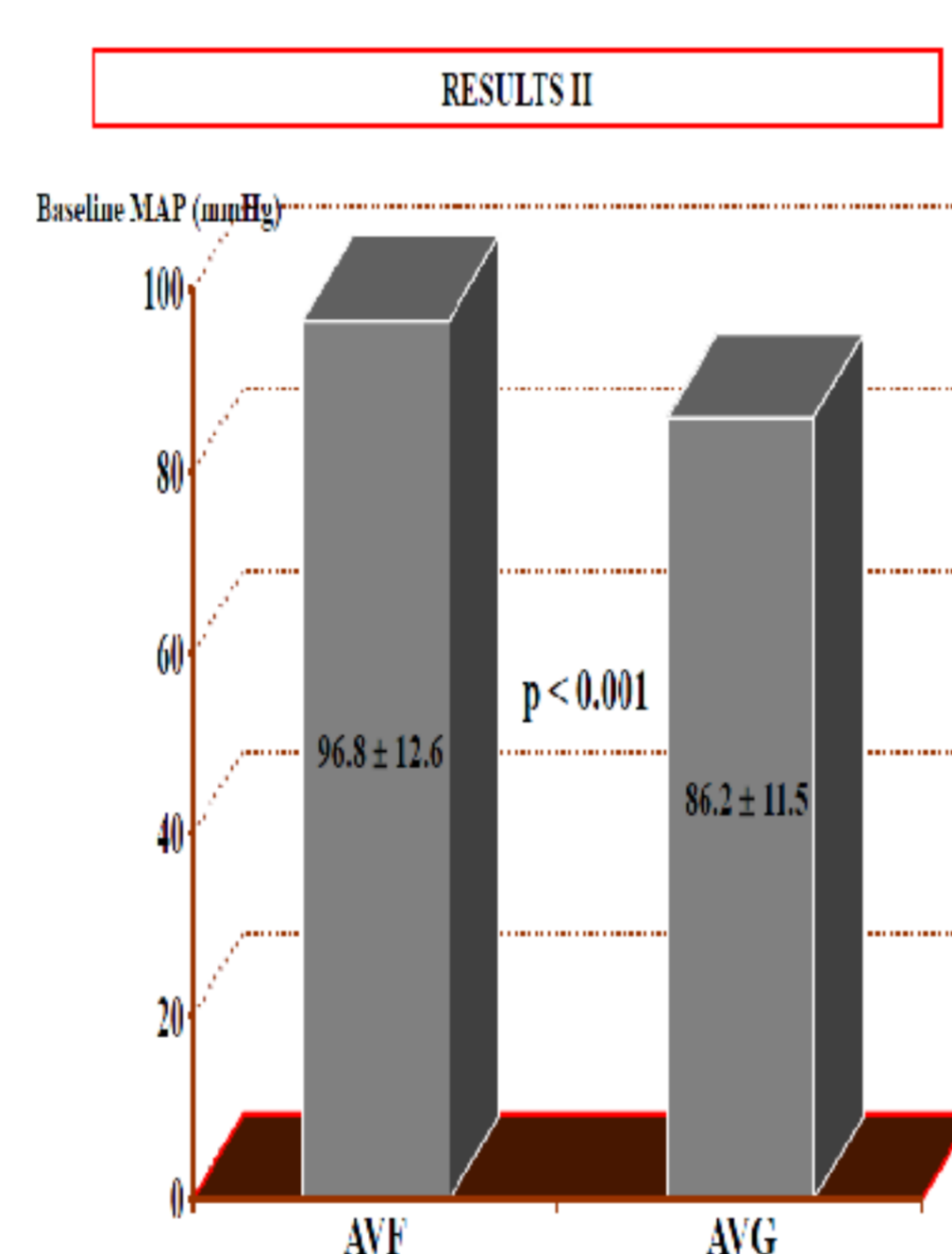
We prospectively recorded the  $Q_A$  in 122 AVF (63.9% radiocephalic and 36.1% brachial artery-based AVF) and 23 AVG (39.1% upper and 60.9% lower limb AVG) during HD of 131 patients (age  $62.6 \pm 13.5$  yr; 19.1% diabetic nephropathy) over 5 year period.

The  $Q_A$  was measured, at least every 4 months, within the first hour of the HD session by the Delta-H method using the Crit Line III monitor; the mean arterial pressure (MAP) was recorded simultaneous with the  $Q_A$ . Baseline  $Q_A$  was measured from two consecutive HD sessions (both values were averaged). All VA with absolute  $Q_A < 700$  ml/min or decreased  $> 20\%$  from baseline over time met the positive evaluation criteria and were referred for angiography and subsequent elective intervention by angioplasty or surgery if there was a significant stenosis (luminal narrowing  $> 50\%$ ).

## RESULTS

RESULTS I

VARIABLE	AVF (n=122)	AVG (n=23)	p
Gender: % (n): Male / Female	65.6 (80) / 34.4 (42)	34.8 (8) / 65.2 (15)	0.006
Age (years)	$61.4 \pm 13.8$	$69.1 \pm 10.0$	0.009
Time on HD (months)	$29.6 \pm 46.3$	$40.9 \pm 44.2$	0.017
Diabetic nephropathy: % (n)	18 (22)	17.4 (4)	1.00
Peripheral vascular disease: % (n)	13.9 (17)	13.0 (3)	1.00
Coronary artery disease: % (n)	20.5 (25)	21.7 (5)	1.00
Cerebrovascular disease: % (n)	20.5 (25)	13.0 (3)	0.57
At least one comorbidity other than diabetes: % (n)	39.3 (48)	39.1 (9)	0.98
VA duration (months)	$31.4 \pm 58.2$	$8.2 \pm 16.0$	$< 0.001$
Ratio number VA / patient	$1.52 \pm 1.06$	$4.30 \pm 1.79$	$< 0.001$
VA with positive evaluation: % (n)	33.6 (41)	26.1 (6)	0.48
VA with stenosis $> 50\%$ : % (n)	27.9 (34)	21.7 (5)	0.38
Elective VA intervention: % (n)	14.8 (18)	17.4 (4)	0.75
$\Delta Q_A$ after elective procedure (ml/min)	$392.9 \pm 250.1$	$498.8 \pm 408.9$	0.47



## CONCLUSIONS

- 1) The type of arteriovenous access (AVF or AVG) did not influence on the functional profile ( $Q_A$ ).
- 2) The differences in blood pressure can help to explain the differences in thrombosis rate between AVF and AVG.
- 3) The VA survival was related to the type of arteriovenous access.