

CAROTID PLAQUE PROGRESSION OVER 4 YEARS IN PATIENTS WITH MILD AND SEVERE STENOSIS



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Introduction

Screening of the neck vessels with doppler ultrasound has allowed to increase stroke prevention strategies over the years. In clinical daily life, carotid plaques are followed up ecographically for years. There is no common agreement on the advisable annual rate of ecographic controls. Our study aimed to analyze plaque progression rate based on initial stenosis. At the end of the study we were able to propose a monthly cadence (timetable) to repeat the ultrasound follow up.

Methods

We retrospectively selected consecutive patients with a carotid ultrasound examination performed in our lab showing stenosis between 50%-90% at baseline and ultrasound follow-up for of at least 48 months. Patients with intervention (CEA or CSA) prior to the first doppler were excluded. Patients were divided into two categories according to stenosis severity: mild (50-69%) and the severe (70-90%). Progression was defined as a 10% increase in stenosis degree or as the occurrence of a cerebrovascular event. The progression time was calculated as the interval between the first Doppler and the time of increase/event demonstration. We then analysed the influence of vascular risk factors on the basal stenosis and the progression of stenosis.

Results

We enrolled 90 patients, 75 with 50-69% stenosis and 15 with 70-90% stenosis. The two groups did not differ for age (mean age: 73,5 y vs 76.6 y, $p=,247$) or for sex (male: 60,3% vs 69,2%, $p=754$). A Kaplan-Meier survival analysis was conducted to compare the time-to-progression in the 50-69% stenosis group versus the 70-90% stenosis group (Figure 1). Patients with a basal stenosis of 50-69% had a median time-to-progression of 17 (95% CI, 12.37 to 21.63) months; patients with a basal stenosis of 70-90% had a median time-to-progression of 7 (95% CI, 0.00 to 14.57) months. The survival distributions for the two basal stenosis situations were statistically significantly different, $\chi^2(2) = 4.966$, $p = .026$ (Table 1). Looking only at patients who presented progression during the 48 months follow up, we found a significance difference in median time-to-progression (14 in 50-69% stenosis group vs 7 in 70-90% group, $p=.018$) (Table 2). We didn't find any correlation between risk factors and stenosis progression in both groups (Table 3).

Conclusion

Our results show that patients with mild stenosis do not benefit from follow up examination time shorter than 12 months, while patients with severe stenosis should be re-evaluated every 3-6 months at the latest. Further analysis are needed to explore if plaque texture and profile can better predict plaque progression of mild stenosis.

Bibliography

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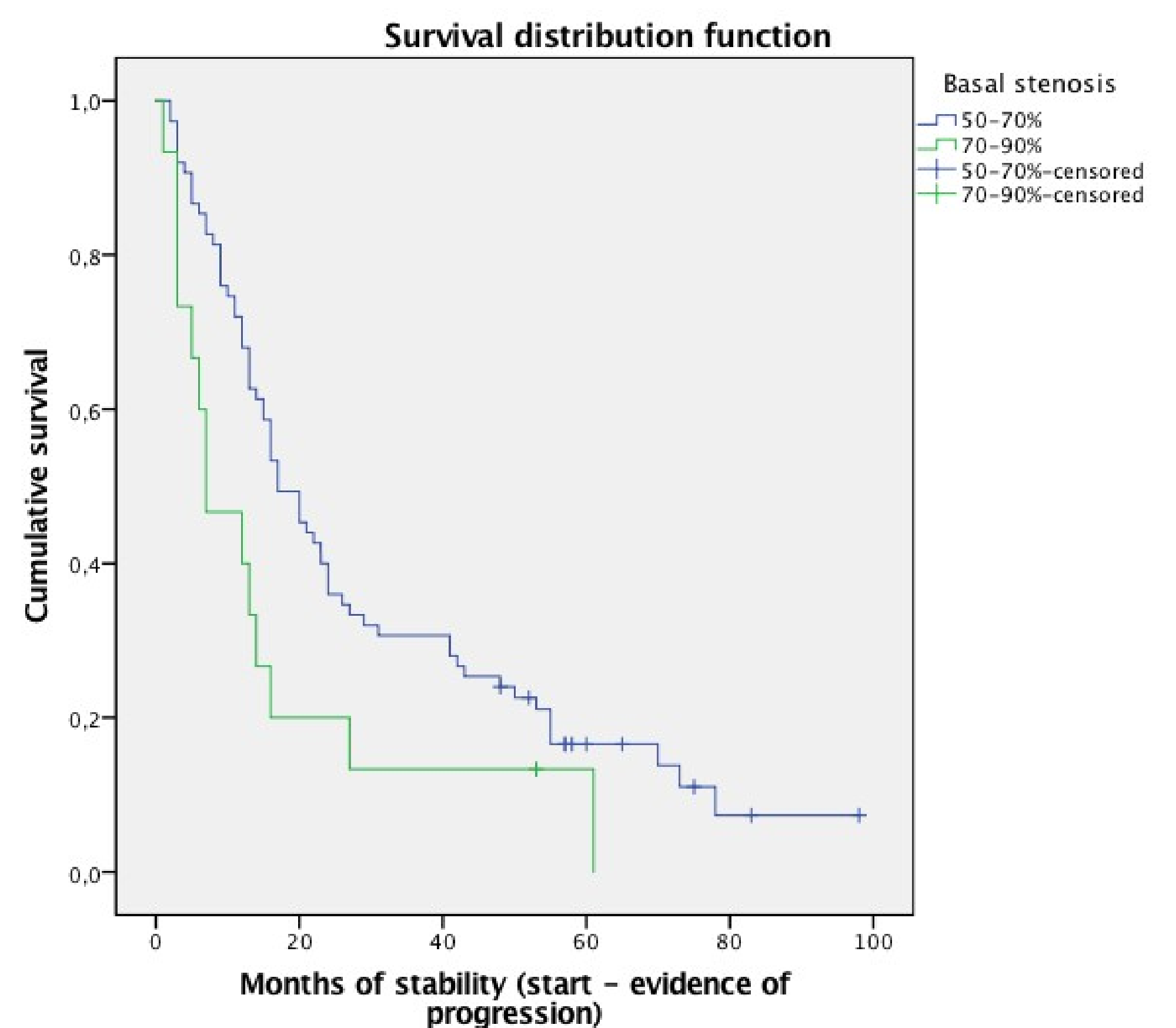


Figure 1: Comparison between mild (50-69%) and severe (70-90%) stenosis: time-to-progression

Table 1

Basal Stenosis (all patients)	Median time-to-progression (month)	IQR		
50-70%	17	12,37	21,63	$\chi^2=4,966$ $p= 0,026$
70-90%	7	0	14,57	
Global	16	13,21	18,79	

Table 2

Basal Stenosis (patients with progression during 48 months)	Median time-to-progression (months)	
50-70%	14	$p= 0,018$
70-90 %	7	
Global	13	

Risk Factors	p
Age	0,143
Statin (No vs low/mod/high intensity)	0,999
Smoke	0,668
Hypertension	0,682
Dyslipidemia	0,561
Diabetes	0,253
Obesity	0,247
Cerebrovascular dis. familiarity	0,639
Atrial fibrillation	0,290
Heart attack	0,825
Previous stroke	0,618
Previous TIA	0,999

Table 3: Binomial logistic regression: baseline risk factors and basal stenosis groups as predictor variables of progression or not progression