

# Risk factors of superficial vein thrombosis in patients with varicose veins

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## Introduction

Varicose veins are the main risk factor for the development of superficial vein thrombosis (1). However, the role of additional factors, which are typically associated with venous thromboembolism, is insufficiently studied in patients with acute varicose thrombophlebitis (AVTPh).

## Purpose

The aim of study was comparison of demographic data and baseline characteristics of varicose veins in two cohorts of patients: with uncomplicated varicose veins of the lower limbs and those with AVTPh.

## Material and methods

The study group included 190 consecutive patients with AVTPh, prospectively enrolled over 4 years. The diagnosis of AVTPh was confirmed based on duplex ultrasound. The control group included 860 patients with varicose veins, the data being extracted from a prospective study previously conducted in the clinic.

1. Decousus H, Epinat M, Guillot K, Quenet S, Boissier C, Tardy B. Superficial vein thrombosis: risk factors, diagnosis, and treatment. *Curr Opin Pulm Med.* 2003 Sep;9(5):393-7. doi: 10.1097/00063198-200309000-00009. PMID: 12904709.

	AVTPh (n = 190)	Varicose veins (n = 860)	P
Age (years)	60 (25-75% IQR 49-66)	50 (25-75% IQR 38-58)	< 0,0001
Age (> 60 old)	98 (51,57%)	171 (19,88%)	< 0,0001
Gender (female)	127 (66,84%)	553 (64,3%)	NS
BMI (kg/m <sup>2</sup> )	28,63 (25-75% IQR 25,49-31,3)	24,1 (25-75% IQR 22-32)	< 0,0001
Obesity (gr. I-III)	74 (38,94%)	255 (29,65%)	= 0,012
Charlson comorbidity index	2 (25-75% IQR 0-2)	1 (25-75% IQR 0-1,8)	< 0,0001
Left lower limb	109/195 (55,89%)	539/1093 (49,31%)	NS
Duration of varicose veins (years)	15 (25-75% IQR 10-25)	15 (25-75% IQR 10-20)	NS
Diameters of sapheno-femoral junction (mm)	12 (25-75% IQR 10-13,75)	9,5 (25-75% IQR 8-11,3)	< 0,0001
Diameters of sapheno-popliteal junction (mm)	10 (25-75% IQR 9,25-12)	8,5 (25-75% IQR 6,85-10)	< 0,05

## Results

Patients with AVTPh had significantly higher: age - 60 (IQR 49-66) vs 50 (IQR 38-58) years; body mass index - 28,6 (IQR 25,4-31,3) vs 24,1 (IQR 22-32) and Charlson comorbidity index - 2 (IQR 0-2) vs 1 (IQR 0-1,8), p < 0,0001. The probability of AVTPh was significantly higher after 60 years (OR 4,3 [3-5,9]) and in those with obesity (OR 1,5 [1,1-2,1]). No differences were found regarding patient gender, laterality and duration of varicose veins. In AVTPh group the diameters of the sapheno-femoral and sapheno-popliteal junctions were larger: 12 (IQR 10-13,7) vs 9,5 (IQR 8-11,3) mm and 10 (IQR 9,2- 12) vs 8,5 (IQR 6,8-10) mm, p < 0,05.

## Conclusions

Age, obesity and comorbidities have an important role in development of AVTPh. Risk factors of AVTPh are similar with those of venous thromboembolism in general. Pronounced dilation of incompetent junctions can contribute to severity of venous stasis and development of thrombosis.

## Keywords

varicose veins, superficial vein thrombosis, risk factors