

## ORIGINAL RESEARCH

### Assessment of Prevalence and Risk Factors for Lower Limb Varicose Veins during Pregnancy

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#### ABSTRACT

**Background:** To assess prevalence and risk factors for lower limb varicose veins during pregnancy.

**Materials and Methods:** 112 pregnant women during prenatal follow-up were enrolled. Varicose disease was clinically identified and classified according to Widmer's criteria: trunk varicose veins, reticular varicose veins, and telangiectasias; being reclassified according to the criteria of the CEAP clinical classification. Patients without visible or palpable signs of varicose disease were considered as CEAP C0. The results of prevalence and risk factors were recorded.

**Results:** Age group 18-24 years had 62, 25-31 years had 34 and 32-38 years had 26 patients. The difference was significant ( $P < 0.05$ ). CEAP C1 e C2 varicose veins were seen in 80 and CEAP C0 in 42. The difference was significant ( $P < 0.05$ ). Varicose veins type C2 was seen in 22, C1 in 58 and C0 in 32. The difference was significant ( $P < 0.05$ ). In multivariate analysis, age over 22 years and positive family history, were significant for varicose veins disease (CEAP C2) with odds ratio above 1.

**Conclusion:** The high prevalence of varicose disease during pregnancy, etiopathogeny and risk factors involved advanced age and positive family history.

**Keywords:** blood vessels, Pregnancy, varicose disease.

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#### INTRODUCTION

Varicose veins, sometimes called varicosity, occur when a valve in the blood vessel walls weakens and the blood stagnates.<sup>[1]</sup> This in turn leads to problems with the circulation in the veins and to oedema or swelling. The vein then becomes distended, its walls stretch and sag, allowing the vein to swell into a tiny balloon near the surface of the skin.<sup>[2]</sup> The veins in the legs are most commonly affected as they are working against gravity, but the vulva (vaginal opening) or rectum, resulting in haemorrhoids (piles), can be affected too. Pregnancy seems to increase the risk of varicose veins and they cause considerable pain, night cramps, numbness, tingling, the legs may feel heavy, achy, and they are rather ugly.<sup>[3]</sup>

Researchers have been observing the correlation between pregnancy and varicose disease for a long time.<sup>[4]</sup> The appearance of venous dilatations in lower limbs or in breasts of women in reproductive age is considered a sign of pregnancy, and some women attribute the appearance of varicose veins to pregnancy and its worsening to successive pregnancies.<sup>[5]</sup> According to the literature, the prevalence of varicose veins during pregnancy varies widely, due the use of diverse concepts, classifications and even the type of epidemiological analysis performed, in addition to regional and racial differences.<sup>[6,7]</sup> Considering this, we conducted present study to assess prevalence and risk factors for lower limb varicose veins during pregnancy.

## MATERIALS & METHODS

After considering the utility of the study and obtaining approval from ethical review committee of the institute, we selected 112 pregnant women during prenatal follow-up. Data such as name, age etc. was recorded. Varicose disease was clinically identified and classified according to Widmer's criteria: trunk varicose veins, reticular varicose veins, and telangiectasias; being reclassified according to the criteria of the CEAP clinical classification. Patients without visible or palpable signs of varicose disease were considered as CEAP C0. The results of prevalence and risk factors were recorded. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

## RESULTS

**Table I: Patients distribution**

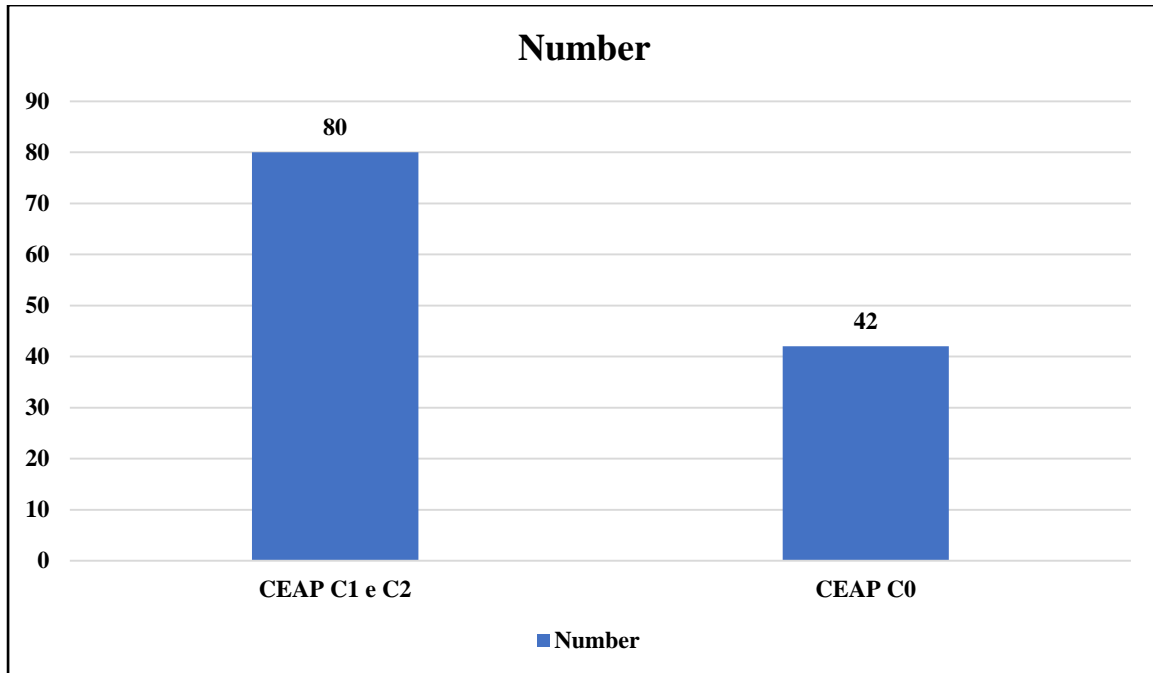
Age group (years)	Number	P value
18-24	62	0.05
25-31	34	
32-38	26	

Age group 18-24 years had 62, 25-31 years had 34 and 32-38 years had 26 patients. The difference was significant ( $P < 0.05$ ) (Table I).

**Table II: Prevalence of varicose disease**

Varicose disease	Number	P value
CEAP C1 e C2	80	0.01
CEAP C0	42	

CEAP C1 e C2 varicose veins were seen in 80 and CEAP C0 in 42. The difference was significant ( $P < 0.05$ ) (Table II, graph I).



**Graph I** Prevalence of varicose disease

**Table III: Prevalence of varicose disease according to types of varicose veins**

Varicose veins	Number	P value
C2	22	0.04
C1	58	
C0	32	

Varicose veins type C2 was seen in 22, C1 in 58 and C0 in 32. The difference was significant ( $P < 0.05$ ) (Table III).

**Table IV: Logistic regression multivariate analysis for risk factors of lower limbs trunk varicose veins**

Parameters	Coefficient	SE	Odd ratios	CI 95%	
				Inferior L	Superior L
Age	1.24	0.35	3.27	1.65	6.5
AF	1.21	0.31	3.29	1.71	7.2
Pregnancies	0.43	0.39	1.12	0.72	3.8

In multivariate analysis, age over 22 years and positive family history, were significant for varicose veins disease (CEAP C2) with odds ratio above 1 (Table IV).

## DISCUSSION

Varicose veins are most commonly seen in North America and Western Europe. Vein problems are less common in the Mediterranean Basin, South America, and India and even more uncommon in the Far East and Africa.<sup>[8]</sup> They are more common in women compared with men. Pregnancy is presumed to be a major contributory factor in the increased incidence of varicose veins in women, varicose veins affecting about 40% of pregnant women.<sup>[9]</sup> Evidence suggests that parous women have a higher incidence of varicose veins compared with nulliparous women (no previous pregnancy), and that multiparous women (more than

one previous pregnancy) have the highest risk.<sup>[10]</sup> In 70% to 80% of women who develop problems with varicose veins during pregnancy, the symptoms appear during the first trimester (first three months of pregnancy), often within two to three weeks of a woman becoming pregnant.<sup>[11,12]</sup> The present study assessed prevalence and risk factors for lower limb varicose veins during pregnancy.

Our results showed that age group 18-24 years had 62, 25-31 years had 34 and 32-38 years had 26 patients. De Barros et al<sup>[13]</sup> assessed the prevalence of lower limb varicose disease during pregnancy and to identify the main associated risk factors. Prevalence of varicose disease during pregnancy is high, affecting almost 70% of pregnant women considering all types of varicose disease. They analyzed 352 pregnant women during prenatal follow-up. The subjects were randomly selected during a 14-month period. Varicose disease was clinically identified and classified according to Widmer's criteria: trunk varicose veins, reticular varicose veins, and telangiectasias; being reclassified according to the criteria of the CEAP clinical classification. Considering all types of varicose veins, prevalence of varicose disease was 72.7% (256 pregnant women). Only 27.3% (96) of pregnant women did not have varicose disease (C0), and this group was considered the control group. After multivariate analysis, the main risk factors were: family history and pregnant women's age.

Our results showed that CEAP C1 e C2 varicose veins were seen in 80 and CEAP C0 in 42. In a careful study, Cornu-Thenard et al<sup>[14]</sup> evaluated 134 patients – 67 with varicose disease and 67 normal – and their parents, concluding that family factor is of great importance in the genesis of varicose disease.

We found that varicose veins type C2 was seen in 22, C1 in 58 and C0 in 32. Maffei, in his study, indicates that there was a positive correlation between the prevalence of varicose veins and number of pregnancies, even with age adjustment. Of 68 women with varicose disease, 66 (9.9%) were nulligestae, 44 (6.6%) were primigestae, 76 (11.4%) were secundigestae, and the other 482 (72.2%) had three or more pregnancies.

We observed that in multivariate analysis, age over 22 years and positive family history, were significant for varicose veins disease (CEAP C2) with odds ratio above 1. Banhidý et al<sup>[15]</sup> estimated the association of pregnant women with varicose veins of lower extremities (VVLE) and the possible risk for adverse birth outcomes and among them different congenital abnormalities (CAs) in their children. Prospectively and medically recorded VVLE were evaluated in 332 pregnant women who delivered infants with CA (case group) and 566 pregnant women with VVLE who delivered infants without CA (control group) and matched to cases were compared in the population-based data set of the Hungarian Case-Control Surveillance System of Congenital Abnormalities, 1980–1996. About one-quarter of pregnant women had chronic VVLE while new onset VVLE occurred in the rest of pregnant women. There was no higher risk for adverse birth outcomes of pregnant women with VVLE, in fact the rate of preterm birth and low birth weight was somewhat lower than in the newborns of pregnant women without VVLE. The comparison of VVLE occurrence in pregnant women who had offspring with 21 different CA groups and in pregnant women who later delivered babies without CA showed a higher risk only for pectus excavatum, a mild CA. In conclusion, VVLE in pregnant women does not associate with obvious hazard for their fetuses.

## CONCLUSION

The high prevalence of varicose disease during pregnancy, etiopathogeny and risk factors involved advanced age and positive family history.

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