

**PATHOPHYSIOLOGY OF VARICOSE VEINS IN LOWER LIMB DURING PREGNANCY: A STUDY**Tanveer Akhtar<sup>1</sup> and Israr Ul Khaliq<sup>2\*</sup><sup>1</sup>MBBS, DGO, MD Physiology.<sup>2</sup>BDS, MDS maxillofacial surgeon.**\*Corresponding Author: Dr. Israr Ul Khaliq**

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**ABSTRACT**

**Introduction:** Why would varicose veins appear in your legs? Leg muscles help push the blood in the leg veins back toward the heart. There are also one way valves in the veins to make sure the blood does not flow backward and pool in the legs. Prevalence of varicose disease during pregnancy is high, affecting pregnant women considering all types of varicose disease. Primary varicose veins are a common problem of the lower extremities, whereas the upper extremities are rarely affected for reasons not entirely clear, seemingly, the cause of varicose vein is, collagen defects in the vein wall resulting in weakness and dilation. Undoubtedly patients with lower extremity varicosities should be at some risk for development of upper extremity varicosities. **Aims and Objective:** The objective of the study was to calculate approximately the involvement of pregnant women with varicose veins of lower extremities (VVLE) and the possible risk for adverse birth. The prevalence of lower limb varicose disease during pregnancy and to recognize the main related risk factors. The pathophysiology of varicose veins in lower limb during pregnancy is assessed in this study. **Material and Method:** We assessed 200 pregnant women during perinatal follow-up. The patients were at random selected during a 1year period. **Results:** Taking into consideration all types of varicose veins, prevalence of varicose disease was high. The main risk factors were family history and pregnant women's age. This high prevalence is mainly caused by the increase in the estrogen and progesterone levels during pregnancy. **Conclusion:** The high prevalence of varicose disease and the associated risk factors suggest the need of providing the health professionals involved in women's health care, especially during the fertile period, with information on this disease.

**KEYWORDS:** Pregnancy, Varicose veins of lower extremities, Veins.**INTRODUCTION**

Varicose Veins is common ailment. A study revealed that, from the affected population, there is around 1-73% of females (Especially during pregnancy) exposed to this condition and average 2-56% of males. Thus, we may conclude that women are more likely to be affected than men. Varicose Veins is a disease which involves swelling and gnarling of the Veins usually of legs. In this disorder, there is reflux flow of blood through the valves of legs, hence instability in circulation of blood.

Lower limbs varicose disease in pregnant women for decades have been drawing researchers' interest. Due to gravity and increased blood volume, lower extremity experience elevated pressure, dilating veins which may be slowly transformed into varicose veins. In addition to increased blood volume direct pressure on the iliac vein by the gravid uterus increases inefficient blood return by the veins and may damage the venous valves. The manifestation of varicose veins during pregnancy and its precocity, the intensity of its development, the uncommon symptoms and mainly the speed of regression

after puerperium are peculiar aspects to lower limbs varicose disease during pregnancy which influence the development of studies about the subject. The reversibility of this disease is the most typical phenomenon; they may decrease or disappear after delivery. Around half of the world population carry lower limbs varicose disease, affecting 50-55% of women and 40-50% of men if minor forms of varicose disease (reticular varicose veins and telangiectasias) are considered. Considering larger and more visible varicose veins, the disease affects less than 25% of the population, assail 2-25% of women and 10-15% of men.<sup>[1-3]</sup>

Researchers have been observing the association between pregnancy and varicose disease for a lengthy time. The form 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 deterioration to successive pregnancies.<sup>[2,6-9]</sup>

According to the literature the prevalence of varicose veins during pregnancy varies extensively, due the use of diverse concepts, classifications and even the type of epidemiological analysis performed, in addition to regional and racial differences. Many studies on this subject present only an estimative of the prevalence of varicose disease during pregnancy. This estimative varies from 20 to 50% of pregnant women and, when all the types of varicose veins are included, e.g. telangiectasias, the number may reach 70%.

## MATERIAL AND METHOD

In the past a number of years, we have encountered many pregnant females of primary varicose veins of the lower extremity. During and after pregnancy, lower limb varicose disease presents precise features that include the appearance of lower limb varicose veins, their early development and intensity, and their quick regression after delivery.

Aiming at assessing the prevalence of varicose disease during pregnancy we have conducted this study with 200 pregnant women, randomly selected. Among pregnancy supplements, here only folic acid and folic acid-containing multivitamins are mentioned. Folic acid supplementation during pregnancy was more frequent in pregnant women with VVLE. The pathophysiology of varicose veins in lower limb during pregnancy is assessed in this study.

## RESULTS

The prevalence of vulvar varicose veins in 14 pregnant women was also observed (7%). We have noted that in all the cases there was an association with lower limbs varicose disease, and in 12 patients (6%) this association was with severe forms (varicose veins) and in two (1%) the association was with reticular veins and telangiectasias. Multivariate analysis of risk factors revealed that age, number of pregnancies and positive family history for varicose disease were associated with the presence of the disease. The number of pregnancies was no longer considered a significant risk factor.

At the assessment of pregnancy complications only medically recorded conditions were considered. The incidence of preeclampsia was somewhat higher while the rate of anemia was significantly higher in pregnant women with VVLE than in pregnant women without VVLE. Surgical intervention due to VVLE occurred only in two women during the study pregnancy.

## DISCUSSION

Increased blood volume, combined with sedentary behavior, combined with sedentary behavior, contributes to development of varicose veins during pregnancy. A healthy women bearing a normal sized fetus, with an average birth weight. The likely relationship between maternal VVLE and pregnancy complications were evaluated in the study. Varicose veins are classified in two groups, according to their etiology: primary

(essential) and secondary (post-thrombotic, due to congenital or acquired arteriovenous fistulae). The pathophysiology of varicose veins in lower limb during pregnancy is assessed in this study. Etiopathogenesis of primary varicose veins is still controversial, multiple and present unknown etiopathogenic factors. In common population, the following etiopathogenic factors are highlighted: family predisposition, sex, age, number of pregnancies, endocrine alterations, obesity, pregnancy, habits and profession, congenital valve alterations and others, however several theories try to explain the appearance or worsening of varicose disease during pregnancy.

The risk factors includes age, hereditary, pregnancy, obesity, occupation which involves prolonged hours standing, Diet, Type of physical activity, Excess hormones, etc. These factors are not clearly known yet. Symptoms related to Varicose may not be observed in case of some affected population. If seen the symptoms at initial stages include severe pain, swelling, itching, heavy legs, and lipodermatosclerosis (skin thickening). If left untreated, the further complications lead to bleeding veins, eczema, skin pigmentation or discoloration, venous ulcers, and hence complete vein incompetence.

A weakened valve can allow blood to leak backward and eventually flow in the opposite direction. When this occurs, blood can collect in the vein(s), which then become enlarged and swollen. The veins farthest from the heart are most often affected, such as those in the legs. This is because gravity makes it harder for blood to flow back to the heart. Any condition that puts pressure on the abdomen has the potential to cause varicose veins; for instance, pregnancy, constipation, tumors.

The possible association between maternal VVLE and pregnancy complications and birth outcomes was evaluated in the study. Three findings are worth reporting. (i) Mothers with VVLE were older with higher parity than women without VVLE. This is in agreement with the findings in previous studies.<sup>[10-15,16]</sup> (ii) There was a higher risk for anaemia, constipation and haemorrhoids in pregnant women with VVLE compared with women without VVLE. (iii) The risk of pectus excavatum was 5 times higher in the children of pregnant women with VVLE compared with the children of women without VVLE. The prevalence of VVLE was 1.2–2.0% of pregnant women and this figure is much lower than about 40% of VVLE rate reported in previous studies.<sup>[15-17]</sup> The higher risk of VVLE in pregnant women may be connected with the hormonal changes for arterio-venous shunt, the mechanical effect of growing uterus for abdominal veins, maternal weight gain with some fluid retention.<sup>[15]</sup> Thus pregnancy is an important causal factor in the demonstration of VVLE, and it partly explains that VVLE at least is twice as frequent in females as in males.<sup>[1]</sup> The diagnosis of anemia was based on the number of erythrocytes, hemoglobin and haematocrit because these laboratory tests were

performed in the prenatal care clinics. Pectus excavatum (funnel chest) is a depression deformity of the thorax in which the sternum, usually the lower part, is depressed towards the spine. This condition may be manifest at birth, but in the majority of cases it first becomes visible when the infant has several months of age.<sup>[18-19]</sup>

The suggested first line therapy of VVLE includes dietary changes, losing weight, smoking cessation and the education for the proper position of lower limb in general, but particularly during relaxation. The second line of therapy comprises of compressive bandage and some drugs. Drugs used for the treatment of VVLE do not seem to be teratogenic though the teratogenic effect of hydroxyethylrutoside was shown in the origin of ocular coloboma.<sup>[20]</sup> The third line of therapy is sclerotherapy and surgical intervention (ablation of the veins). Other options are: taking licorice root for a year improves circulation and begins to help after several months, alove vera drink is anti-inflammatory, externally witch hazel, olive oil, and tea tree oil calm the veins.

## CONCLUSION

The high prevalence of varicose disease during pregnancy and risk factors involved (mainly age and family history) in the development of this disease indicate the necessity of using effective prophylactic measures that should be indicated since the beginning of pregnancy and since the first pregnancy, thus promoting the maintenance of the pregnant woman's health and, consequently, of the newborn. A higher risk for pectus excavatum was found in the children of pregnant women with VVLE though other adverse birth outcomes have not been revealed, thus VVLE in pregnant women does not associate with other obvious hazard for their fetuses. In short, VVLE in pregnant women does not associate with obvious hazard for their fetuses.

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