



RESEARCH ARTICLE

VARICOSITIES BURDEN IN PREGNANCY: TREATMENT DILLEMAS AND RECENT UPDATES

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ABSTRACT

Varicose veins in the vulvar and peri vulvar area in women is commonly present during pregnancy. These develop early in pregnancy, hence pressure theory of gravid uterus is no longer accepted. The treatment of varicose veins in pregnancy is mostly conservative because, most of the treatment options are not safe and also these regress in the post partum period. We have reviewed all the treatment options available and their safety in pregnancy.

INTRODUCTION

Ambrose Pare, in 1579, wrote that 'it is best not to meddle with varicose veins during pregnancy'. He discouraged and condemned the injection treatment of varicose veins in pregnancy. The use of taping, bandages and elastic stockings was recommended, and afforded some temporary relief to the lower leg, but proved of little value in varicose veins of the vulva and upper thigh, where they are often extensive. Pressure theory is no longer accepted as an important factor, since varicose veins develop early in pregnancy. It may, however, be a factor late in pregnancy because of a reduction in the negative intra-abdominal pressure and direct pressure of gravid uterus. Pressure from the enlarging uterus, increase in cardiac output cannot be the only factors causing varicose veins, as these are seen to develop in early weeks of pregnancy. Hormones have a role to play, most important being Progesterone, as the pregnant females with varicose veins have lower incidence of abortions and preterm births (Banhidy *et al.*, 2010). Higher age and higher parity are characteristics for varicose veins. The use of oral contraceptives and HRT do not increase the risk (Jukkola *et al.*, 2006). Haemorrhoids are swollen and inflamed veins in the anus and lower rectum, are another form of varicose veins. The varicose veins are associated with pain, leg edema, cramps and discomfort. Treatment is challenging because most of the treatment options available are not safe in

pregnancy and also because they regress in post partum period. The main objective of this study was to evaluate the safety of the various treatment options available till date.

MATERIALS AND METHODS

The literature reviews conducted from 2000 to 2015 to identify various sources of information pertaining varicose veins in pregnancy. Electronic search engines for internet, journal and open access databases were searched for various keywords. A search of Medline, Google, Google scholar, PubMed for relevant systemic reviews, meta analysis, randomised controlled trials and other clinical trials was conducted. The keywords used were 'varicose veins in pregnancy', 'sclerotherapy', 'treatment of varicose veins', 'herbal remedies for varicose veins', 'Daflon', 'Rutoside', 'calcium dobesilate'. The search was kept open to all the symptoms, investigations and treatment of varicose veins in pregnancy.

DISCUSSION

The incidence of varicose veins in pregnancy in our hospital is 2% of all the antenatal patients. This incidence is low as compared to the study conducted by Bihari *et al* in Budapest where incidence was 57.1% (Bihari *et al.*, 2012). The low incidence in our set up is due to lack of awareness to seek medical help, economical factors and ignorance. The patients with varicose veins were in their early gestation. The chances of progress of varicose veins is more likely if the patient is

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overweight, has a big baby, with multiple pregnancy or in patients with repeated child birth. Varicose veins can become complicated with time and lead to skin pigmentation, eczema, superficial thrombophlebitis, bleeding, lipodermatosclerosis and venous ulceration if left uncared. Patients with varicose veins should be advised to have weight control, light to moderate physical activity, avoid factors which make symptoms worse and to know where and when to seek medical help. The only modifiable risk factor which is associated with higher risk progression of varicose veins and a predicted worse outcome after treatment is BMI of more than 30 (Seidel *et al.*, 2015). The initial investigations include duplex scan, followed by magnetic resonance scan. The duplex scan is able to assess both the deep, superficial and perforating veins to give important information on anatomical patterns of vein patency, vein diameters and valve function. Such highly detailed information may help to decide the type of treatment considered most appropriate (Campbell *et al.*, 1996). Various treatment modalities available are herbal remedies, homeopathy, osteopathy, acupuncture, sclerotherapy and surgical procedure. The varicose veins arising in pregnancy are known to regress in the post partum period, hence conservative approach is more acceptable. Grace *et al* summarised the NICE guidelines and stated not to carry out interventional treatment for varicose veins during pregnancy other than in exceptional circumstances (Grace Marsden *et al.*, 2013). The conservative treatment consists of elevation of legs, elastic stockings, avoiding standing position and control of body weight. In event of venous stasis and severe symptoms, surgical intervention is required. The surgical procedures include sclerotherapy, microsclerotherapy, laser surgery, endogenous ablation therapy, endoscopic vein ligation and phlebectomy.

Role of compression stockings in pregnancy

Thaler *et al* did a randomised controlled trial and concluded that compression stockings do not prevent the emergence of gestational varicose veins, however they significantly decrease the incidence of long saphenous vein reflux at sapheno-femoral junction and improve leg symptoms (Thaler *et al.*, 2001). Another study was done by Bamigboye *et al* that external compression stockings do not appear to have any advantage in reducing leg oedema associated with varicose veins in pregnancy (Bamigboye and Smyth, 2007). Raju *et al* reported that out the patients who had been prescribed compression stockings, full compliance was reported in only 28 % of the patients (Raju *et al.*, 2007). The primary reason for non compliance were : unable to state a reason, lack of efficacy, poor fit, too hot, soreness, cosmetic reasons, itching, worsening of symptoms and cost. We agree with the NICE guidelines which clearly state that compression stockings can improve symptoms but will not prevent varicose veins from emerging.

Role of sclerotherapy in pregnancy

Reich *et al* stated that according to the guidelines, pregnancy is a contraindication for sclerotherapy with Polidocanol. However, they analysed from the existing case reports and retrospective studies that there is no reason for interruption of pregnancy after a sclerotherapy has been conducted in undetected pregnancy (Reich Schurke *et al.*, 2012). In view of the limited literature data available and high probability for spontaneous regression of varicose veins postpartum, we conclude that sclerotherapy should be avoided in pregnancy

when possible. Its use in pregnancy should be limited to only those cases which cannot be managed conservatively.

Table 1. Vaso Active Drugs (VAD) used in varicose veins (Lyseng Williamson and Perry, 2003)

Vaso Active drug	Recommendation for use	Quality of evidence
Daflon (MPFF)	Strong	Moderate
Rutoside	Strong	Moderate
Calcium Dobesilate	Strong	Moderate
HSCE	Weak	Low
Ruscus extracts	Weak	Low



Figure 1. Patient with 30 weeks of pregnancy presenting with varicose veins

Role of drugs in varicose veins in pregnancy

Vasoactive drugs (VAD) are widely used in varicose veins. However, their safety in pregnancy is a concern and limit their usage. Daflon is a vasoactive drug which improves the venous tone and lymphatic drainage, and reduce capillary hyper permeability by protecting microcirculation from inflammatory processes. It is a micronised purified flavonoid fraction which consists of 90% diosmin and 10% other flavonoids (hesperidin, diosmin, linarin). It is indicated as first line treatment of symptoms associated with any stage of chronic venous disease. Daflon 500 mg may be used in conjunction with sclerotherapy, surgery and/or compression therapy, or as an alternative treatment when surgery is not indicated or is not feasible (Lyseng Williamson and Perry, 2003). It is given 500 mg twice a day for management of chronic venous disease. Buckshee *et al* confirmed the advantage of the safety of Daflon in pregnancy, a period when haemorrhoids and varicose veins is common and surgery is a relative contraindication (Buckshee *et al.*, 1997). We conclude that Daflon is a safe drug in pregnancy and can be recommended to patients who do not benefit from conservative management and have symptoms causing discomfort. Rutoside is another VAD used in varicose veins. Young *et al* gave rutoside capsules to pregnant patients with varicose veins and found that in the last three months of pregnancy marked improvement in the symptoms was noted (Young and Jewell, 2000). Bamigboye *et al* in 2006 concluded rutosides relieved symptoms of venous insufficiency in late pregnancy, however the safety of the drug requires more trials (Bamigboye and Hofmeyr, 2006). Bamigboye *et al* in 2007 again did an intervention for varicose veins and leg edema in pregnancy and concluded that rutosides appear to help relieve symptoms of varicose veins late in pregnancy (Bamigboye and Smyth, 2007). Due to the limited literature available, rutosides should not be considered as first line treatment. Calcium Dobesilate helps in proper functioning of the vascular system

particularly the veins, helps in the repair and maintenance of the blood vessels. It has been used in mild and moderate mid trimester hypertension disorders. However, limited studies are available for its use in varicose veins in pregnancy (Tamas *et al.*, 1999) More clinical trials are required to confirm its safety for varicose veins in pregnancy. HSCE is horse chestnut extract, the seed of horse chestnut contains a complex of triterpene saponins known collectively as escin, which has been shown to promote vascular circulation. It also tones veins, and decreases capillary permeability, inhibiting the vascular leakage of water and protein into nearby tissues (Guillaume and Padioleau, 1994). Not enough is known about the safety of horse chestnut in pregnancy so it is best avoided. Ruscus extracts includes Ruscus aculeates that contains an important flavonoid, and two anti inflammatory compounds, ruscogenin and neuruscogenin, that strengthen and tone the veins, and act as mild diuretics. They may also lead to constriction of the veins which helps blood return from the extremities (Presser and Arthur, 2000). Although no adverse effects are known, but these drugs should not be taken by pregnant and lactating women as studies to prove their safety are not present.

Haemorrhoids are a form of varicose veins of the anus and rectum. These are present mostly in third trimester. Since these resolve completely in the postpartum period, the primary goal of treatment is to relieve acute symptoms - mostly by dietary and lifestyle modifications.

Conclusion

Pregnancy is a state which predisposes to varicose veins. With measures like controlled weight gain, avoiding prolonged standing position and elevation of legs, the emergence of varicose veins can be avoided. However, once these are present in pregnancy, treatment should be mostly conservative like elevation of legs, avoiding triggering factors, rest in left supine position and compression stockings. For those patients in whom conservative management is not helpful, the patient should be counselled about the benefits and risks associated with sclerotherapy and vaso active drugs. Also because varicose veins regress in post partum period, conservative management is mostly recommended.

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