Selected phlebological abstracts

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Patterns of flow drainage from varicose veins originating in the incompetent great saphenous vein

Coelho F, Benatti MIS, Ricciardi MC, Dormeli de Carvalho N, Belczak SQ, Boim de Araújo WJ, Gomes de Oliveira R. J Vasc Bras. 2022; 21: e20220019. Published online 2023 Jan 6. doi: 10.1590/1677-5449.202200192.

The authors studied, in 55 chronic venous disease patients who had undergone ultrasound, the reflux drainage patterns from varicose veins originating in incompetent great saphenous vein (GSV), the prevalence of perforating veins (PV), and their symptoms. Fifty-five ultrasound reports were analyzed. 64% of the cohort demonstrated that reflux from varicose veins drained into the PVs; 4% of the cohort revealed reflux drained to the GSV; 4% drained into the small saphenous vein; and in 29%, drainage was to varicose trunk veins in which no direct communication with the deep system could be identified. No associations were observed between symptoms and reflux drainage patterns or PV diameters. The authors concluded that for this sample size, PVs were responsible for draining flow from varicose veins in 64% of cases. Neither PV diameters nor GSV reflux patterns were associated with severity of symptoms.

Provision of NICE-recommended varicose vein treatment in the NHS

Hitchman LH, Mohamed A, Smith GE, Pymer S, Chetter IC, Forsyth J, Carradice D. Br J Surg. 2023 Jan 10;110(2): 225-232.

In the National Health Service (NHS) in England, commissioning of care for people with varicose veins is performed by Clinical Commissioning Groups (CCGs) and clinical guidelines have been developed by the National Institute for Health and Care Excellence (NICE CG168). The Evidence-Based Intervention (EBI) program was introduced in the NHS with the aim of improving care quality and supporting implementation of NICE CG168. The aim of this study was to assess access to varicose vein treatments in the NHS and the impact of EBI. CCG policies for the delivery of varicose vein treatments in the NHS in England were obtained from 2017 (before EBI introduction) and 2019 (after EBI introduction) and categorized by two independent reviewers into levels of compliance with NICE CG168. Hospital Episode Statistics data were compared with the NICE commissioning model predictions. CCG compliance with NICE CG168 fell from 34% (64 of 191) to 29% (55 of 191), despite the introduction of the EBI program. 33% of CCG policies (63 of 191) became less compliant and only 7.3% (14 of 191) changed to become fully compliant. Overall, 66.5% of CCGs (127 of 191) provided less than the recommended intervention rate before EBI and this increased to 73.3% (140 of 191) after EBI. Moreover, the overall proportion of patients estimated to require treatment annually who received treatment fell from 44 to 37%.

The authors concluded that many local varicose vein commissioning policies in the NHS are not compliant with NICE CG168. Greater than 50% of the patients who should be offered varicose vein treatment are not, and there is widespread geographical variation. The EBI program has not been associated with any improvement in commissioning or access to varicose vein treatment.

Balneotherapy for chronic venous insufficiency

Silva MA, Nakano LC, Cisneros LL, Miranda F. Cochrane Database Syst Rev. 2023 Jan 9;1(1).

The authors, in this study, assessed the effectiveness and safety of balneotherapy (treatments involving water) for the treatment of people with chronic venous insufficiency (CVI). Extensive Cochrane search methods were utilized.
They included randomized and quasi-randomized controlled trials comparing balneotherapy to no treatment or other types of treatment for CVI. In addition, studies that utilized a combination of therapies were included. Primary outcomes were 1. disease severity, 2. health-related quality of life (HRQoL) and 3. adverse events. Secondary outcomes were 1. pain, 2. edema, 3. leg ulcer incidence and 4. skin pigmentation changes. The authors used GRADE to assess the certainty of evidence for each outcome. Nine randomized controlled trials involving 1,126 participants with CVI were included. Seven studies evaluated balneotherapy versus no treatment, one study evaluated balneotherapy versus a phlebotonic drug (melilotus officinalis), and one study evaluated balneotherapy versus dryland exercises. Balneotherapy compared to no treatment probably results in slightly improved disease severity signs and symptoms scores as assessed by the Venous Clinical Severity Score (VCSS; mean difference (MD) -1.75, 95% confidence interval (CI) -0.02 to -0.49; 3 studies, 671 participants; moderate-certainty evidence). Balneotherapy compared to no treatment may improve HRQoL as assessed by the Chronic Venous Insufficiency Quality of Life Questionnaire 2 (CIVIQ2) at three months, but the authors are very uncertain about the results (MD -10.46, 95% CI -19.21 to -1.71; 2 studies, 153 participants; very low-certainty evidence). The intervention may improve HRQoL at 12 months (MD -4.48, 95% CI -8.61 to -0.36; 2 studies, 417 participants; low-certainty evidence). It is unclear if the intervention has an effect at six months (MD -2.99, 95% CI -6.53 to 0.56; 2 studies, 436 participants; low-certainty evidence) or nine months (MD -6.40, 95% CI -13.84 to 1.04; 1 study, 59 participants; very low-certainty evidence). Balneotherapy compared with no treatment may have little or no effect on the occurrence of adverse effects. The main adverse effects were thromboembolic events (odds ratio (OR) 0.35, 95% CI 0.09 to 1.42; 3 studies, 584 participants; low-certainty evidence), erysipelas (OR 2.58, 95% CI 0.65 to 10.22; 2 studies, 519 participants; low-certainty evidence) and palpitations (OR 0.33, 95% CI 0.01 to 8.52; 1 study, 59 participants; low-certainty evidence). No studies reported any serious adverse effects. Balneotherapy compared with no treatment may improve pain scores slightly at three months (MD -1.12, 95% CI -1.35 to -0.88; 2 studies, 354 participants; low-certainty evidence) and six months (MD -1.02, 95% CI -1.25 to -0.78; 2 studies, 352 participants; low-certainty evidence). Balneotherapy compared with no treatment may have little or no effect on edema (measured by leg circumference) at 24 days to three months, but the authors are very uncertain about the results (standardized mean difference (SMD) 0.32 cm, 95% CI -0.70 to 1.34; 3 studies, 369 participants; very low-certainty evidence). Balneotherapy compared with no treatment may have little or no effect on the incidence of leg ulcers at 12 months, but the authors are very uncertain about the results (OR 1.06, 95% CI 0.27 to 4.14; 2 studies, 449 participants; very low-certainty evidence). Balneotherapy compared with no treatment may slightly reduce skin pigmentation changes as measured by the pigmentation index at 12 months (MD -3.60, 95% CI -5.95 to -1.25; 1 study, 59 participants; low-certainty evidence). Balneotherapy versus melilotus officinalis, there was little or no difference in pain symptoms (OR 0.29, 95% CI 0.03 to 2.87; 1 study, 35 participants; very low-certainty evidence) or edema (OR 0.21, 95% CI 0.02 to 2.27; 1 study, 35 participants; very low-certainty evidence), but the authors are very uncertain about the results. The study reported no other outcomes of interest. Balneotherapy versus dryland exercise, evidence from one study showed that balneotherapy may improve HRQoL, as assessed by the Varicose Vein Symptom Questionnaire (VVSymQ), but the authors are very uncertain about the results (MD -3.00, 95% CI -3.80 to -2.20; 34 participants, very low-certainty evidence). Balneotherapy compared with dryland exercises may reduce edema (leg volume) after five sessions of treatment (right leg: MD -840.70, 95% CI -1053.26 to -628.14; left leg: MD -767.50, 95% CI -910.07 to -624.93; 1 study, 34 participants, low-certainty evidence). The study reported no other outcomes of interest.

The authors concluded that for balneotherapy versus no treatment, they identified with moderate certainty evidence that the intervention improves disease severity signs and symptoms scores slightly, with low-certainty evidence that it improves pain and skin pigmentation changes and with very low-certainty evidence that it improves HRQoL. Balneotherapy compared with no treatment made little or no difference to adverse effects, edema, or incidence of leg ulcers. Evidence comparing balneotherapy with other interventions was very limited.

**Migraine aura-like episodes following sclerotherapy for varicose veins of the lower extremities: A systematic review**

Bahtiri L, Thomsen AV, Ashina M, Hougaard A. *Headache*. 2023 Jan;63(1):40-50.

The authors in this systematic review provide a summary and evaluation of cases of migraine aura-like episodes elicited by sclerotherapy of veins of the lower extremities and discusses possible underlying mechanisms. PubMed was searched for only original studies and case reports on neurological complications that were transient and fully reversible following sclerotherapy. All articles were vetted by 2 authors independently. The following were extracted: details on symptoms, previous migraine history, sclerotherapy method, and the presence of a right-to-left cardiac shunt in patients. In addition, the authors evaluated whether episodes fulfilled modified International Classification of
Headache Disorders, 3rd edition, criteria for 1.2 Migraine with aura or 1.5.2 Probable migraine with aura. The search yielded 777 articles, 28 of which were included. Twenty-six articles reported 119 episodes of transient neurological symptoms in 34,500 sclerotherapy sessions. Two additional articles reported six episodes of transient neurological symptoms with no specification of the number of sessions. Of the 125 episodes, 119 involved transient visual disturbances, and 8 met the modified criteria for probable migraine with aura. Clinical information was insufficient to determine if the criteria were fulfilled in 98%.

The authors concluded that symptoms are clinically indistinguishable from migraine with aura attacks and may occur following sclerotherapy (rare). Microembolization through a right-to-left shunt triggering cortical spreading depolarization is a proposed possible mechanism. Future prospective studies are needed to determine this phenomenon’s incidence and underlying mechanisms.

Rivaroxaban treatment for six weeks versus three months in patients with symptomatic isolated distal deep vein thrombosis: Randomized controlled trial
Ageno W, Bertu L, Bucherini E, Camporese G, Dentali F, Iotti M, Lessiani G, Parisi R, Prandoni P, Sartori M, Visona A, Bigagli E, Palareti G. 2022 BMJ 379 e072623.

The authors conducted a randomized, double blind, placebo controlled clinical trial of 402 adults with symptomatic isolated, distal deep vein thrombosis (DVT). Patients received standard rivaroxaban for six weeks. They were then assigned to either 6 additional weeks of rivaroxaban (200 patients) or placebo (202 patients). Recurrent isolated distal DVT occurred in 8% of the patients in the rivaroxaban arm, and 15% in the placebo arm. Proximal DVT or pulmonary embolism occurred in 3% of patients in the rivaroxaban arm and 4% in the placebo arm. There were no major bleeding events.

The authors concluded that patients treated for 6 additional weeks after initial treatment have a reduced risk of recurrent venous thromboembolism (VTE) and recurrent distal DVT without risk of major bleeding.

Accurate diagnosis of isolated iliac vein thrombosis in third trimester pregnancy with clues on great saphenous vein reflux: A case report and review of literature
Wei Z, Li J, Liang L, Luo H. 2023 BMC Pregnancy Childbirth. doi: 10.1186/s12884-023-05412z.

This is a case presentation of a patient at 35 weeks of gestation with persistent left lower limb edema and tenderness. Ultrasound showed continuous great saphenous vein (GSV) reflux suggestive of iliac vein obstruction. Venography confirmed acute left external iliac vein thrombosis. A filter was placed and she underwent a cesarian section.

The authors suggest that the presence of continuous GSV reflux should raise questions regarding a possible venous outflow obstruction caused by deep vein thrombosis (DVT).

The incidence of deep vein thrombosis after anterior cruciate ligament reconstruction: An analysis using routine ultrasonography of 260 patients
Joo YB, Kim YM, Song JH, An BK, Kim YK, Kwon ST. 2022 PloS One. 17(12) 30279136.

The authors studied 260 patients who underwent isolated anterior cruciate ligament (ACL) reconstruction and reviewed the records retrospectively. Regardless of symptoms, all patients were studied one week postoperatively using ultrasound. 8.1% of patients showed deep vein thrombosis (DVT). 1.9% had thrombosis of the popliteal vein. Sixteen patients had thrombosis of the distal veins.

The authors concluded that this rate is higher than the previously known incidence which was only for symptomatic patients.

Independent predictors and timing of portomesenteric vein thrombosis after bariatric surgery
Carlin AM, Varban OA, Ehlers AP, Bonham AJ, Ghaferi AA, Finks JF. 2022 Surg Obes Relat Dis 19(12) 1385-1391.

The authors conducted a prospective study of all patients who underwent primary bariatric surgery. 11% of the patients developed a postoperative portomesenteric vein thrombosis (PVT) with 5.1% associated death. Risk factors included sleeve gastrectomy. The PVT presented in the second (37%), third (31%) and fourth weeks (23) post operatively. Additional risk factors included history of prior venous thromboembolism (VTE), liver disorder, sleeve gastrectomy and postoperative complications including obstruction and hemorrhage.

The authors recommend chemoprophylaxis within the first month post operatively in those patients with these risk factors.