

Table XXXXXI. REVAS and PREVAIT cause,evaluation, prevention and treatment

Reference underlined in color means same RCT

31 articles. 28 RCTs

Operative procedure	Reference	Summary
<p>Open surgery with and without saving saphenous trunk</p>	<p>Hammarsten J, Pederson P, Cederlund C- G, Campanello M. Long saphenous vein saving surgery for varicose vein. A Long term follow-up. <u><i>Eur J Vasc Surg.</i></u> 1990;4:361-4</p> <p>Hammarsten J, Campanello M, Pedusen P. Long Saphenous vein saving surgery for varicose vein. <u><i>Eur J Vasc Surg.</i></u> 1993;7:763-764</p> <p>Campanello M, Hammarsten J, Forsberg S,C, Bernland P et al. Standard stripping versus long saphenous vein saving surgery for primary varicose veins : a prospective, randomized study with the patients as their own controls. <u><i>Phlebology.</i></u> 1996;11:45-9</p>	<p>Monocenter study Patients with primary VV and SFJ and GSV incompetence. SSV competent, no data on deep vein No CEAP classification Group I (n=18): OS of GSV <i>versus</i> Group II (n=18): HL+ GSV tributary and incompetent perforator ligation. Post-operative results Less subjective postoperative discomfort in group II Results at 4 years of follow-up: - No difference between groups in terms of clinical outcome and plethysmography as far as incompetent perforators had been treated - Ultrasound examination: Patent and compressible GSV in group II</p>

<p>Liquid chemical ablation <i>versus</i> Open Surgery</p>	<p>Einarsson E, Eklöf B, Neglén P. Sclerotherapy or surgery as treatment for varicose veins: A prospective randomized study. <i>Phlebology</i>.1993;8:22-26.</p>	<p>Monocenter study 164 patients with symptomatic primary VV located in GSV or/and SSV territory. No data on deep vein or CEAP classification Group I (n=80): OS <i>versus</i> Group II (n=84): Liquid sclerotherapy Post-operative results: · <i>Loss of working days:</i> 1 day in group II vs 20 days in group I Results at 5 years of follow-up: · <i>Rate of clinical failure:</i> 10% in group I <i>versus</i> 74% in group II <i>Foot volumetry measurement:</i> in favor of group I. P< 0.01</p>
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	<p>Travers JP, Makin GS. Reduction of varicose vein recurrence by use of post-operative compression stockings. <i>Phlebology</i>. 1994;9:104-107. Doi:10.1177/026835559400900304</p>	<p>Monocenter study. Sixty-nine patients with GSV insufficiency were treated either by SFJ ligation and stripping or avulsion No data on SSV, deep vein, CEAP clinical classification All patients wear crevic crepe applied the 1st postoperative day and later tubular stockinet for 2 weeks, then Group I (n=33): no compression <i>versus</i> Group II (n=36) compression by stocking Results at 3, 6, 9 and 12 months of follow-up (F-U): 39 % of patients allocated stockings were either lost to FU or abandoned their use after 3 months. At 1-year F-U only 6 % had PREVAIT in group II compared to group I 71%, assessed by clinical examination and hand-held doppler</p>
	<p>Jones L, Braithwaite BD, Selwyn D, Cooke S, Earnshaw JJ. Neovascularisation is the principal cause of varicose vein recurrence: results of a randomised trial of stripping the long saphenous vein. <i>Eur J Vasc Endovasc Surg</i>. 1996;12:442-445. PMID: 8980434</p>	<p>Monocenter study One hundred patients with primary GSV incompetence (133 LL) No data on SSV, deep venous system, CEAP clinical classification Group I: (n=69): HL +tributary stab avulsion <i>versus</i> Group II (n=64): HL +GSV stripping +tributary stab avulsion Two-year follow-up in 81 patients (113 LL) Group I - More REVAS than in group II. P=0.04 - When calf vein recurrences alone were considered, the difference was more. P= 0.02.</p>

		<p>- Neovascularization (serpentine tributaries arising from the ligated saphenofemoral junction) was detected in 52% of limbs and was the commonest cause of recurrence. REVAS was reduced by routine stripping of the GSV</p>
	<p>Dwerryhouse S, Davies B, Harradine K, Earnshaw JJ. Stripping the long saphenous vein reduces the rate of reoperation for recurrent varicose veins. five-year results of a randomized trial. <i>J Vasc Surg.</i> 1999;29:589-92.</p>	<p>Monocenter study 100 patients with saphenofemoral junction incompetent and GSV varices +/- Deep vein anomaly. No data on SSV CEAP clinical class C2-C3 Group I (n=52): OS of GSV <i>versus</i> Group II (n=58): HL+ tributary phlebectomy +/- perforator ligation of GSV Results at 5 years of follow-up No difference between groups in terms of VV recurrence rate but more redo surgery in group II</p>
	<p>Gibbs PJ, Foy DMA, Darke SG. Reoperation for recurrent saphenofemoral incompetence: a prospective randomized trial using a reflected flap of pectineus fascia. <i>Eur J Vasc Endovasc Surg.</i> 1999;18:494-498. PMID: 10637145</p>	<p>Monocenter study Thirty-seven patients (40 LL) presenting symptomatic REVAS in GSV territory and neovascularization at the SFJ. No data on CEAP classification, SSV and deep veins. All patient re-exploration and re-ligation of the SFJ. Group I (n=20 LL): with placement of a flap of pectineus fascia at SFJ <i>versus</i> Group II (n=20 LL): without placement of a flap of pectineus fascia at SFJ Follow-up (F-U) minimum 18 months 6 patients lost to F-U. No difference in terms of REVAS between the 2 groups</p>
	<p>Marakova NP, Lurie F, Hmnelniker SM.</p>	<p>Single center study. 125 extremities with GSV +/- perforator incompetence, (superficial) femoral vein +/- popliteal vein incompetence</p>

	<p>Does surgical correction of the superficial femoral vein valve change the course of varicose disease? JVS 2001;33:331-68</p>	<p>CEAP clinical severity C2-C4 Group I (n=62 LL): GSV stripping, or/and subfascial perforators ligation +/- tributary stab avulsion. Group II (n=63 LL): GSV stripping, or/and subfascial perforators ligation, +/- tributary stab avulsion+ Internal valvuloplasty of the (superficial) femoral vein according to Kistner's technique performed first. Outcome at 4-5 years Group I: 65% of the extremities showed stable improvement, PREVAIT was present in 11% and in 24% the venous disease was aggravated. Group II: 86% of the extremities showed stable improvement and PREVAIT was present in 5 % and in 10% the venous disease was aggravated. P<0.05. After valvuloplasty, the corrected valve remained competent during follow-up in 45 extremities. Reappearance of reflux was observed in 12 extremities, Extremities in group II demonstrated superior results in comparison with group I (clinical improvement in 92% and 66% of extremities, respectively (P < .005).</p>
	<p>Frings N, Nelle A, Tran Ph, Fischer R, Krug W. Reduction of neoreflux after correctly performed ligation of the Saphenous junction. A randomized trial. <i>Eur J Vasc Endovasc Surg.</i> 2004;28:246-252. PMID: 15288626</p>	<p>Multi-center study 379 patients presenting GSV incompetence and symptomatic primary varices C2-C5.No data on SSV, deep veins All patients were surgically treated including 500 consecutive SFJ ligation+ stripping and +/- tributary avulsion Group I (n=125): HL with absorbable material for SFJ ligation <i>versus</i> Group II (n=125): HL with absorbable material for SFJ ligation+ Polypropylene suture over the stump <i>versus</i></p>

		<p>Group III (n=125): HL with non-absorbable material for SFJ ligation Group IV (n=125): HL with non-absorbable material for SFJ ligation + Polypropylene suture over the stump Follow-up at 3 months and 2-year <u>Neo reflux present</u> Group I:10% Group II:0% Group III:11 % Group IV: 4% Neo reflux was significantly reduced in the two groups with endothelial closure (groups II and IV) P<.0.025</p>
	<p>Winterborn RJ, Foy C, Earnshaw JJ. Causes of varicose vein recurrence: late results of a randomized controlled trial of stripping the long saphenous vein. <i>J Vasc Surg.</i> 2004;40:634-639. PMID: 15472588</p>	<p>Monocenter study 100 patients with saphenofemoral junction incompetent and GSV varices +/- Deep vein anomaly. No data on SSV CEAP clinical class C2-C3 Group I (n=52): OS of GSV <i>versus</i> Group II (n=58): HL+ tributary phlebectomy +/- perforator ligation of GSV Results at 11 years of follow-up: No difference between groups in terms of VV recurrence rate but more redo surgery in group II.</p>
	<p>Haas E, Burkhardt T, Maile N. Recurrence rate by neovascularization following a modification of long saphenous vein operation in the groin: a prospective randomized duplex-ultrasound controlled study. [in German]. <i>Phlebologie.</i> 2005;34:101-104.</p>	<p>Multi-center study 1054 Patients (1389 limbs) with SFJ and GSV reflux. No data on deep vein and SSV No data on CEAP clinical classification Group I (n=607): HL +stripping+/- tributary avulsion <i>versus</i> Group II (n=292): HL+ with fascia cribriformis suture + stripping +/-tributary avulsion</p>

		<p><i>versus</i> Group III (n=490): HL with inverting suture of the stump+ stripping +/- tributary avulsion Results at 5 years of follow-up: <i>Presence of neovascularization at the SFJ with or without varices:</i> Group I=9.6% vs Group II=5.7% vs Group III=9%. P=NS</p>
	<p>Winterborn R.J, Earnshaw J.J. Randomized trial of PTFE patch for recurrent great saphenous varicose veins. <i>Eur J Vasc Endovasc Surg.</i> 2007;34:367-373. PMID: 17512226</p>	<p>Monocenter study. 31 patients (40 lower limbs) with SFJ reflux recurrence and GSV reflux. No SSV incompetence. No data on CEAP clinical classification Group I (n=20 lower limbs): redo SFJ ligation <i>versus</i> Group II (n=20 lower limbs): redo SFJ ligation+ PTFE patch interposition Results at 6 weeks, 1 year, and 2 years of follow-up: No difference between groups in terms of perioperative complications and recurrent neovascularization.</p>
	<p>Kianifard B, Holdstock J, Allen C, Smith C, Price B, Whiteley MS. Randomized clinical trial of the effect of adding subfascial endoscopic perforator surgery to standard great saphenous vein stripping. <i>Br J Surg.</i> 2007;94:1075-1080. PMID: 17701962</p>	<p>Monocenter study 68 patients with primary GSV incompetence + Pe reflux. No SSV incompetence, no major deep vein anomaly. REVAS excluded CEAP clinical classification C1-C5 Group I (n=34): HL + Stripping+ Tributary phlebectomy <i>versus</i> Group II (n=34): HL + Stripping + Tributary phlebectomy + SEPS Patients with isolated SFJ junction reflux or /and deep reflux. Results at 1 week to 1 year of follow-up: The addition of SEPS was not associated with significant morbidity and had no effect on VV recurrence rate or HRQoL outcomes, but did reduce the number of incompetent Pe</p>

	<p>Winterborn R.J, Foy C, Heather H, Earnshaw J.J. Randomized trial of flush saphenofemoral ligation to standard and invagination stripping. Eur J Vasc Endovasc Surg. 2008;36:477-484. PMID: 18718771.</p>	<p>Monocenter study 182 patients (210 lower limbs) with GSV reflux. No SSV incompetence, no data on deep vein. CEAP clinical classification C2-C6 Group I (n=87 lower limbs): flush SFJ ligation <i>versus</i> Group II (n=114 lower limbs): standard transfixion SFJ ligation Results at 2 years of follow-up: No difference between groups in terms of PREVAIT and neovascularization</p>
	<p>van Rij AM, Jones GT, Hill, G, Amer M, Thomson IA, Pettigrew RA, Packer SGK Mechanical Inhibition of Angiogenesis at the Saphenofemoral Junction in the Surgical Treatment of Varicose Veins. Early Results of a Blinded Randomized Controlled Trial. Circulation. 2008;118:66-74 PMID: 18559704</p>	<p>Monocenter study 389 LL (292 patients) presenting GSV and SFJ reflux. No data on SSV. Deep venous reflux or previous DVT was not a contra-indication. CEAP clinical classification >2. All patients treated by HL and stripping Group I (n=150): HL <i>versus</i> Group II (n=142): HL+PTFE patch Follow-up 1, 6, 12, 36 months - At 3 years ultrasound detected SFJ recurrence Group I 25/56 P<0.01 Group II 11/44 - More precisely the patch consistently halved the recurrence rate to 3 years postoperatively in all clinical subgroups. - In group II that still developed recurrence, evidence of neovascularization circumventing the PTFE patch was observed by both ultrasound and histology.</p>
	<p>Hinchliffe RJ, Uhbi J, Beech A, Ellison J, Braithwaite. A prospective randomised controlled trial of VNUS Closure versus surgery for the</p>	<p>16 patients presenting bilateral REVAS with persistent GSV trunk. One leg: RFA with VNUS Closure bipolar catheter on one lower limb <i>versus</i></p>

	<p>treatment of recurrent long saphenous varicose veins. EJVS.2006;31:212-8</p>	<p>Other leg: redo-groin surgery (RGS) + Stripping. Anesthesia: no standardization Results at 10 days of follow-up: - Procedure shorter with VNUS compared with RGS. P=0.02 - Less post-operative pain with VNUS compared with RGS. P=0.02 - Less bruising with VNUS compared with RGS.P=0.03</p>
<p>Classic open surgery versus EVLA for for GSV or SSV incompetence</p>	<p>Theivacumar NS, Darwood MJ, Gough MJ. Neovascularization and Recurrence 2 years after treatment for sapheno-femoral and great saphenous reflux: a comparison of surgery and endovenous laser. <i>Eur J Vasc Endovasc Surg.</i> 2009;38:203-207</p>	<p>Monocenter study. Patients with primary GSV incompetence. No previous surgery on VV. No incompetent anterior accessory GSV, no SSV reflux, no deep vein anomaly. CEAP classification C2-C6 Group I (n= 69 lower limbs): 980-nm diode laser, bare fiber, pulse mode, with local tumescent anesthesia versus Group II (n= 60 lower limbs): OS with general anesthesia Results at 2 years of follow-up: - Recurrence rates similar in both groups - Neovascularization less frequent in group I (EVLA) compared with group II (P= 0.001)</p>
<p>Open surgery versus CHIVA</p>	<p>Carandina S, Mari C, De Palma M, et al. Stripping vs haemodynamic correction (CHIVA): a long term randomised trial. <i>Eur J Vasc Endovasc Surg.</i> 2008;35:230-7.</p>	<p>Monocenter study 150 patients with GSV incompetence with one or more incompetent tributary of the GSV No data on SSV, no deep vein anomaly CEAP clinical classification C2-C6 Group I (n=75): OS versus Group II (n=75): cure CHIVA Results at 10 years of follow-up: Less VV recurrence in group II compared with group I. (OR 2.2, 95% CI 1-5, P= 0.04)</p>
<p>Open surgery versus</p>	<p>Parés JO, Juan J, Tellez R, Mata A,</p>	<p>Monocenter study 334 patients symptomatic or not with primary GSV incompetence</p>

<p>CHIVA</p>	<p>Moreno C, Quer FX et al. Varicose vein surgery. Stripping versus the CHIVA method: a randomized controlled trial. <i>Ann Surg.</i> 2010; 251:624-31.</p>	<p>No data on SSV. No previous DVT, interventional VV treatment on the same LL CEAP clinical class C2-C6 Group I (n=167): OS with clinical marking <i>versus</i> Group II (n=167): OS with duplex marking <i>versus</i> Group III (N=167): CHIVA Results at 5 years of follow-up: - Better clinical outcome (symptoms and signs) in group III compared with group I and II. - Clinical and duplex ultrasonographic assessment: Less recurrence in group III compared with group I and II (OR 2.01, CI 1.4-3. P< 0.001.</p>
<p>Preoperative duplex scan before varices surgery</p>	<p>Blomgren L, G. Johansson GL Emanuelsson L, Dahlberg-Akerman A, Thermaenius P, Bergqvist D. Late follow-up of a randomized trial of routine duplex imaging before varicose vein surgery . <i>BJS</i> 2011;98;112-16</p>	<p>Monocenter study 293 patients, 343 lower limbs (LL) presenting primary and uncomplicated varicose veins (GSV an/or SSV) No detailed data on CEAP classification; perforator or deep vein. All were treated by classical open surgery Group I: n=166 LL preoperative duplex imaging Group II: n= 177 LL no preoperative duplex imaging Outcome at 7-year 194 LL were examined clinically and by duplex imaging 95 in group I 99 in group II - No patient developed an ulcer -Incompetence at SFJ or SPJ in group I= 14%, in group II=46%. P<0.001 - Quality of life (SF 36) was similar in both groups -Redo surgery was proposed in symptomatic patients and performed or offered respectively in group I. n=15, group II. n= 38. P=0.001</p>

		Redo surgery was mainly related to tactical failure
HL+ EVLA versus EVLA without HL	Disselhoff BC, der Kinderen DJ, Kelder JC, Moll FL. Five-year results of a randomised clinical trial of endovenous laser ablation of the great saphenous vein with and without ligation of the saphenofemoral junction. <i>Eur J Vasc Endovasc Surg.</i> 2011;41;685-90.	<p>Multi-center study <i>Bilateral GSV primary incompetence in 43 patients (86 lower limbs). No data on SSV, absence of deep vein anomaly, CEAP clinical class C2</i> Group I (n=43) HL+EVLA on one lower limb <i>versus</i> Group II (n=43) EVLA without HL on the other lower limb <i>810-nm diode laser, bare fiber, continuous laser withdrawal used in</i> <i>both groups</i> <i>Anesthesia: general (day case procedure) or local (outpatient procedure)</i></p> <p>Results at 5 years of follow-up: . Groin recurrence: 65%in group I, 79%in group II. P=0.36 . Global recurrence and VCSS: no difference between the 2 groups</p>
EVLA 12 W intermittent laser withdrawal versus 14W continuous laser withdrawal	Samuel N, Wallace T, Carradice D, Mazari F AK, Chetter C. Comparison of 12-W versus 14-W Endovenous laser ablation in the treatment of great saphenous varicose veins: 5- Year outcomes from a randomized controlled trial. <i>Vascular and Endovascular Surgery.</i> 2013;47:346-52.	<p>Monocenter study <i>Primary Incompetent SFJ, reflux in GSV 76 patients. No data on SSV, absence of deep vein anomaly, CEAP clinical class C2-C5</i> Local tumescent anesthesia Group I (n=38): laser 810-nm bare fiber; laser power 12 W with 1-second laser pulses at 1-second intervals between pulse <i>versus</i> Group II (n=38): laser 810-nm bare fiber; laser power 14 W continuous withdrawal 2mm/s. Concomitant phlebectomy and/or Perforator ligation in both groups.</p> <p>Results at 1 week-5 years of follow-up: Significant improvement in both groups in VCSS, pain scores, AVQQ scores, HRQoI scores (SF-36 EQ-5D) compared to preoperative</p>

		status P>0.05 Results at 5 years of follow-up: Better long-term occlusion
HL+Stripping ± tributary phlebectomy <i>versus</i> Stripping with ligation below SFJ ± tributary phlebectomy	Casoni P, Lefebvre-Villardebó M, Villa F, Corona P Great saphenous vein surgery without high ligation of the saphenofemoral junction. <i>J Vasc Surg</i> 2013;58:173-178.	Multi-center study 120 symptomatic or asymptomatic patients with SFJ and GSV reflux No SSV incompetence, no data on deep vein. No previous surgery on the GSV CEAP clinical classification C2-C6 Group I (n=60): HL+Stripping +/- tributary phlebectomy <i>versus</i> Group II (n=60): Stripping with ligation below SFJ of GSV +/- tributary phlebectomy Results at 8 years of follow-up: · <i>PREVAIT and DS reflux</i> Group I = 32.2% vs group II=16.4 %. P= 0.045 · <i>Average time of PREVAIT</i> Group I=3.5 ±1.2 years vs group II= 4.1±1.6 years P= 0.358= NS
Classic open surgery <i>versus</i> EVLA for for GSV or SSV incompetence	Rasmussen LA, Lawaetz M, Bjoern L, , Blemings A, Eklof B. Randomized clinical trial comparing endovenous laser ablation, and surgical stripping of great saphenous varicose veins with clinical and duplex outcome after 5 years. <i>J Vasc Surg</i> 2013;58:421-6	Multi-center study. Patients with primary GSV incompetence. No incompetent anterior accessory GSV, no SSV reflux, no deep vein anomaly. CEAP classification C2-C4 Group I (n=69): Diode 980-nm diode laser, bare fiber, stepwise laser withdrawal <i>versus</i> Group II (n=68): OS Local tumescent anesthesia for both procedures Results at 1, 2 and 6 months, and then 1-5 years of follow-up Results at 5 years of follow-up: · <i>GSV persistent reflux at DS examination:</i> no significant difference between groups (P=0.2145)

		<ul style="list-style-type: none"> · <i>Clinical recurrence</i>: no significant difference between groups. P= 0.7209 · <i>Retreatment</i>: no significant difference between groups. P=0.9876 · <i>VCSS improvement</i>: lasted from month 1 month to year 5 without difference between groups. · <i>AVVSS improvement</i>: significant improvement in both groups from 3 month and onwards (P < 0.0001), with no difference between groups at any time point <i>SF-36 scores</i>: improved in all domains and similarly in both groups
<p>OS versus EVLA versus UGFS</p>	<p>van der Velden SK, Biemans AA, De Maeseneer MG, Kockaert MA, Cuypers PW, Hollestein LM et al. Five-year results of a randomized clinical trial of conventional surgery, endovenous laser ablation and ultrasound-guided foam sclerotherapy in patients with great saphenous varicose veins BJS 2015;102:1184-1194</p>	<p>Multicenter study 224 lower limbs patients in CEAP C₂₋₅s with incompetent GSV and SFJ reflux All treatments just below or above the knee Group I (n=69): OS under general or spinal anesthesia versus Group II (n=7!): EVLA 940 nm, bare fiber, continuous laser withdrawal under local anesthesia versus Group III (n=77): UGFS with complementary session after 3 months when needed Results at 5- year of follow-up: · <i>Obliteration or absence of the GSV</i> Group I =95%, Group II =77%, Group III= 23% · <i>Absence of above knee reflux</i> Group I =85%, Group II =82%, Group III= 41% · <i>All groups had equivalent CIVIQ sores and showed significant improvement in HRQoL (EQ5D) with no difference between the groups</i> · <i>Reinterventions and additional treatments of the GSV above the knee</i> Groups I and II= 10%; Group III= 32%</p>

<p>Classic open surgery versus EVLA variants for for GSV or SSV incompetence</p>	<p>Flessenkämper I, Hartmann M, Hartmann K, Stenger D, Roll S. Endovenous laser ablation with and without high ligation compared with high ligation and stripping for treatment of great saphenous varicose veins: Results of a multicentre randomised controlled trial with up to 6 years follow-up. <i>Phlebology</i>. 2016;31(1):23-33.</p>	<p>Multi-center study. Patients with primary GSV incompetence + incompetent SFJ. No data on SSV and deep venous system CEAP clinical classification C2-6 All procedures were performed under general, peridural or spinal anesthesia Group I (n=159): HL+ Stripping Group II (n=142): EVLA Group III (n=148): EVLA+HL Diode 980-nm diode laser, bare fiber, continuous mode in groups II and III. Anesthesia: unknown in group I; local tumescent anesthesia in groups II and III. Results at 2 (74% of patients) up to 6 years of follow-up (31% of patients) Clinical recurrence appears with the same frequency in all three treatment groups, but the responsible pathological mechanisms seem to differ. Group I: more recurrence at the SFJ Group II and III: more recurrence into the GSV and tributaries.</p>
<p>OS versus EVLA versus RFA versus UGFS</p>	<p>Lawaetz M, Serup J, Bjoern L , Blemings A, Eklof B. Rasmussen LA. Comparison of endovenous ablation techniques, foam sclerotherapy and surgical stripping for great saphenous varicose veins. Extended 5-year follow-up of a RCT. <i>Int. Angiology</i> 2017; 36:281-8</p>	<p>Multi-center study 580 lower limbs with primary symptomatic incompetent GSV and SFJ reflux. No incompetent anterior accessory vein, no SSV incompetence, no deep vein anomaly CEAP clinical classification C2-C4 Group I (n=142): OS versus Group II: EVLA 980 (n=17) and 1470 nm (n=127), bare fibre versus Group III (n=148): RFA Closure Fast™ versus Group IV (n=144): UGFS one or 2 sessions when needed</p>

		<p>All procedures under local anesthesia, and completed by phlebectomy</p> <p>Results at 5 years of follow-up:</p> <p>Number patients assessed/ Number of patients included</p> <p>Group I (n=40/142): OS</p> <p>Group II (n=45/144): EVLA 980 and 1470 nm</p> <p>Group III (n=55/147): RFA Closure Fast™</p> <p>Group IV (n=37/144); UGFS</p> <ul style="list-style-type: none"> . Recanalization or failed stripping procedure <ul style="list-style-type: none"> Group I = KM estimate 6.3% Group II = KM estimate 36.8% Group III = KM estimate 5.8% Group IV = KM estimate 31.7% . Recurrent VV <ul style="list-style-type: none"> Group I = KM estimate 36.4% Group II = KM estimate 36.8% Group III = KM estimate 18.7% Group IV = KM estimate 31.7% . Retreatment <ul style="list-style-type: none"> Group I = KM estimate 23.4% Group II = KM estimate 18.7% Group III = KM estimate 17% Group IV = KM estimate 37.7%
<p>Chemical ablation (UGFS) <i>versus</i> Open Surgery (HL+S)</p>	<p>Lam YL, Lawson JA, Toonder IM, Shadid NH, Sommer A, Veenstra M, et al. Eight-year follow-up of a randomized clinical trial comparing ultrasound-guided foam sclerotherapy with surgical stripping of the great saphenous vein. Br J Surg. 2018;105(6):692-8</p>	<p>430 patients presenting primary GSV incompetence were randomized between UGFS and open surgery</p> <p>CEAP clinical class C1(?) - C5. SSV, perforator and deep vein status not documented</p> <p>Group I (n=230): UGFS</p> <p><i>versus</i></p> <p>Group II (n=200): OS.</p> <p>Outcome at 8 years</p> <p>Patients available, group I=123, group II=103.</p>

		<ul style="list-style-type: none"> . Symptoms free: Group I =72.1% P=0.024 Group I= 55.1% . Absence of GSV reflux Group I =49.7% P=0.0009 Group II= 33.1% . Reflux at SFJ Group I = 65.8 % P=0.001 Group II= 41.7% . Clinical outcomes Long-term follow-up suggests significant clinical progression of venous disease measured by VCSS in both groups, but less after surgery.
<p>OS versus EVLA versus UGFS</p>	<p>Vähäaho. S, Halmeski K, Albäck A, Saarinen F, Venermo M. Five-year follow-up of a randomized clinical trial comparing open surgery, foam sclerotherapy and endovenous laser ablation for great saphenous varicose veins. BJS 2018;105:686-691</p>	<p>Multicenter study 196 patients in CEAP C₂₋₄s with incompetent GSV All treatments just below or above the knee Group I (n=65): OS including tributary phlebectomy under general anesthesia completed by local tumescent anesthesia versus Group II (n=73): EVLA 980 nm, bare fiber, then 1470-Nm radial fiber; pulsed mode, 12 W energy completed by tributary phlebectomy under local tumescent anesthesia versus Group III (n=76): UGFS Polidocanol 1% or STS & and 3% with complementary session after 1 month, then 2 months when needed. Outcome at 5 years, 166 patients available for follow-up. Group I=50, Group II =57, Group III= 59 GSV absent or occluded</p>

		<p>Group I = 48 patients Group II = 51 patients Group III 30 patients The difference between the USGFS group and the EVLA or surgery group was statistically significant. P <0.001 The mean AVVSS was slightly higher after UGFS, but the differences between the treatment groups were not statistically significant (P =0.636).</p>
RFA versus cyanoacrylate embolization (CAE)	<p>Morrison N, Gibson K, Vasquez M, Weiss , Jones A. Five-year extension study of patients from a randomized clinical trial (VeClose) comparing cyanoacrylate closure versus radiofrequency ablation for the treatment of incompetent great saphenous veins . JVS V&L 2020;8:978-89</p>	<p>Multi-center study 222 patients with symptomatic GSV incompetence. No data on SSV. No previous DVT. CEAP clinical classification C2-C4 Multi-center study Group I (n=72): CAE no anesthesia versus Group II (n=74): RFA tumescent anesthesia Results at 60 months: 89 patients Group I (n=47) Group II (n=33) 9 CAC roll-in patients . Occlusion rate Group I = 91.4% Group II= 85.2%. Symptoms and quality of life improved equally in both groups.(VCSS,AVQQ,EuroQoI-5,EQ-5D)</p>

Abbreviations:

GSV= great saphenous vein; HL= high ligation ; HL=high ligation; HRQoL=health-related quality of life LL=lower limb ; OS= Open Surgery: saphenofemoral ligation+ stripping, +/- perforator ligation+/- tributary phlebectomy ;PREVAIT=presence of varices after interventional treatment; PTFE= polytetrafluoroethylene; REVAS=Recurrent varices

after surgery SEPS=subfascial endoscopic perforator surgery; SFJ=saphenofemoral junction; SSV=small saphenous vein
;VV=varicose veins