<table>
<thead>
<tr>
<th>Operative procedure</th>
<th>Reference</th>
<th>Summary</th>
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<tbody>
<tr>
<td>Classic open surgery versus EVLA versus UGFS</td>
<td>Biemans AAM, Kockaert M, Akkersdijk GP, van den Bos RR, de Maeseneer MGR, 240 Cuypers P et al. Comparing endovenous laser ablation, foam sclerotherapy, and conventional surgery for great saphenous varicose veins. J Vasc Surg. 2013;58:727-34.</td>
<td>240 consecutive patients in CEAP C2-6 s with incompetent GSV and SFJ reflux All treatments just below or above the knee Group I (N=80): OS under general or spinal anesthesia versus Group II (N=80): EVLA 940 nm, bare fiber, continuous laser withdrawal under local anesthesia versus Group III (N=80): UGFS with complementary session after 3 months when needed Results at 1 year of follow-up: Lower occlusion rate in group III (72.7%) compared with this in group I (88.22%) and group II (88.5%): P&lt;0.02 Lower complication rate, comparable between the groups. All groups showed significant improvement in HRQoL (EQ5D) with no difference between the groups. Result at 6 weeks to 6 months of follow-up: Lower complication rate lower in group II compared to groups I and III (P&lt;0.001) HRQoL scores: (AVVQ, EQ-5D ™, SF-36): similar scores after treatment in all groups ( nonsignificantly worse in group II using the disease- specific AVVQ) VCSS scores: similar clinical results in the 3 groups Anatomical outcome on DS assessment: lower ablation rate in group II compared to groups I and III (P&lt;0.001)</td>
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<td>Brittenden C, Cotton SC, Elders A, Ramsay CR, Norrie J, Burr J et al. A Randomized Trial Comparing Treatments for Varicose Veins. New Engl J Med. 2014.371(13):1218-27.</td>
<td>Multicenter study of 798 varicose veins patients Group I (N=210): EVLA under local anesthesia. Saphenous truncal ablation completed after 6 weeks by USGFS if needed. versus Group II (N=286): UGFS using the Tessari method with STS 1-3%; ratio air/ sclerosing agent 3/1; 12 ml maximum/session Versus Group III (N=289): OS consisting of HL+GSV stripping+ tributary phlebectomy under general anesthesia Results at 6 weeks to 6 months of follow-up: Lower complication rate lower in group II compared to groups I and III (P&lt;0.001) HRQoL scores: (AVVQ, EQ-5D ™, SF-36): similar scores after treatment in all groups (nonsignificantly worse in group II using the disease- specific AVVQ) VCSS scores: similar clinical results in the 3 groups Anatomical outcome on DS assessment: lower ablation rate in group II compared to groups I and III (P&lt;0.001)</td>
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Evla 9 patients n; %
Foam 11 patients n; %
Surgery 11 patients n; %

Complete success 6/9; 66.7%
Partial success 3/9; 33.3%
Failure 0/9; 0%

Complete success 2/7; 28.6%
Partial success 3/9; 33.3%
Failure 0/9; 0%

Evla 7 patients n; %
Foam 13 patients n; %
Surgery 9 patients n; %

Complete success 2/7; 28.6%
Partial success 3/9; 33.3%
Failure 0/9; 0%

Saphenous truncal ablation completed after 6 weeks by USGFS if needed. Group II (N=286): USGFS using the Tessari method with STS 1-3%; ratio air/sclerosing agent 3/1; 12 ml maximum/session. Group III (N=289): OS consisting of HL+GSV stripping+ tributary phlebectomy under general anesthesia.

Results at 6 months of follow-up:
Costs: group III > group I > group II
QALY: QALYs was derived from responses to the EQ-5D™ and is often used in cost-utility analysis. The results suggest, for patients considered eligible for all three treatment options, that EVLA has the highest probability of being cost-effective at accepted thresholds of willingness to pay per QALY.

<table>
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<th>Partial success</th>
<th>2/7; 28.6%</th>
<th>1/13 7.7%</th>
<th>0/9; 0%</th>
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<tr>
<td>Failure</td>
<td>3/7; 42.9%</td>
<td>10/13;76.9%</td>
<td>8/9; 88.9%</td>
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224 lower limbs patients in CEAP C2-5 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=71): 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:
Obliteration or absence of the GSV
Group I =95%, Group II =77%, Group III =23%
Absence of above knee reflux
Group I =85%, Group II =82%, Group III =41%
All groups had equivalent CIVIQ sores and showed significant improvement in HRQoL (EQ5D) with no difference between the groups
Reinterventions and additional treatments of the GSV above the knee
Groups I and II= 10%; Group III= 32%


214 patients in CEAP C2-4 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.

Post-operative outcome up to 1-month
- Postoperative pain measured with VAS
Lesser in group III
- Sick leave
Shorter in group III.P<0.001
- Hematoma
Lesser in group III compared to groups I and II. P=0.001
- Skin Pigmentation
More common in group III compared to group I and II. P<0.001

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**Outcome at 1 year**

- **Saphenous occlusion**
  Better in group I and II compared to group III
  P <0.001

- **Persistent reflux below the knee**
  Better in group I and II compared to group III
  P <0.008

- **AVVSS**
  No significant difference between the 3 groups

|---|
| 196 patients in CEAP C<sub>2</sub>-<sub>4</sub> 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 & 3% with complementary session after 1 month, then 2 months when needed.

**Outcome at 5 years**, 166 patients: group I=50, Group II =57, Group III= 59

- **GSV absent or occluded**
  - Group I = 48 patients
  - Group II = 51 patients
  - Group III (N=59) 30 patients

The difference between the UGFS group and the EVLA or surgery group was statistically significant (P <0.001) AVVSS.

**Abbreviations:**

AVOO = Aberdeen varicose vein questionnaire; AVVSS = Aberdeen varicose vein severity score; CIVIQ = Chronic Venous Insufficiency Quality-of-Life Questionnaire; DS = duplex ultrasound; EQ5D = Euro Qol 5D; EVLA = endovenous laser ablation; GSV = great saphenous vein; HS = high ligation; HRQoL = Health related quality of life; OS = Open Surgery; saphenofemoral ligation+/- perforator ligation+/- tributary phlebectomy; LA = local anesthesia; QALY = Quality Adjusted Life Year; QoL = quality of life; RFA = radiofrequency ablation; STS = sodium tetradecyl sulphate; USGFS = ultrasound guided foam sclerotherapy; VAS = venous analgical score; VCSS = venous clinical severity score