to renal related secondary intervention was 450 days (Q1—Q3, 124—991.5) for both procedures.

**Conclusion:** FEVAR and BEVAR are durable options for the treatment of complex aortic aneurysms and are associated with a low renal morbidity rate. Freedom from renal composite events was significantly higher with FEVAR. Renal volume is as accurate way to depict renal dysfunction during follow-up.

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**Angiosome Guided Surgical Revascularization; the Truth and Falsehood**

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**Introduction:** The usefulness of angiosome guided therapy in critical limb ischemia has been under debating. We tried to evaluate the efficacy of angiosome guide revascularization comparing the results between complete revascularization using great saphenous vein (GSV) Y graft and single graft bypass.

**Methods:** From Jul 2008 to Dec 2012. a total of 102 CLI patients underwent BTK or pedal bypass surgery for critical limb ischemia. 71 pts (83 limbs) underwent single graft bypass (Anterior tibial artery or posterior tibial artery), otherwise 31 patients (37 limbs) underwent complete revascularization using GSV Y graft.

**Results:** There is no statistical difference between both two groups in terms of preoperative demographics, postoperative complications and mean 3 years follow up results. However, in the patients who underwent single graft bypass surgery, primary patency is longer in positive pedal arc group compared to no pedal arch group (85% in positive pedal arc group vs. 47.6% in no pedal arc group). In the patients who underwent Y graft bypass surgery, primary patency was similar in both groups (87.5% in positive arc group vs. 80% in no pedal arc group).

**Conclusion:** Angiosome guided treatment is necessary in the cases of negative pedal arch. If the patients shows negative compatibility in terms of wound location with angiosome area, and poor pedal arch, complete revascularization using GSV Y graft or angiosome guided single bypass surgery is reasonable. Otherwise, if pedal arch is competent in peri-operative evaluation, single bypass surgery regardless of angiosome is sufficient.

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**One Bout of Calf Raises Induces Improvement of Mitochondrial Function in Claudicants**

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**Introduction:** Mitochondria in patients with PAD do not produce as much ATP as mitochondria in normally perfused muscle. Therefore patients with PAD do not only have a decreased supply of nutrients and oxygen, as a result of diseased arteries, but the concurrent mitochondrial respiratory defects also lead to an even lower ATP production from the amount of O2 present.

Ischemic preconditioning is known to improve functionality and to increase the number of mitochondria. We wanted to explore whether any impact on the mitochondria would be seen already after one bout of training. The extended goal being whether specific “mitochondrial training” with increased ATP production to follow could improve symptoms for patients with claudication.

**Methods:** Two groups were tested: a control group with healthy elderly individuals (n = 11) and another group with intermittent claudication (n = 8).

In patients with claudication we used one bout of continuous calf raises followed by 5 extra repetitions after initiation of pain. This approach secured local ischemia and reperfusion = ischemic preconditioning in the gastrocnemius muscle. The control group performed 100 calf raises.

Biopsies from the gastrocnemius muscle were taken 15 minutes prior to the training and another four at fixed time intervals (15 min, 1 h, 3 h and 24 h) after the single bout of exercise.

Respiratory capacities were determined by using mitochondrial respirometry. The main substrates used were octanoylcarnitine, glutamate (fatty acid oxidation), malate (complex I), succinate (complex I and II), and FCCP and rotenone (complex II).

Repeated measures mixed model was used for statistical analysis. Statistical significance was indicated by a value of p <0.05.

**Results:** Within the group of claudicants Complex I respiratory capacity reached the highest value at 24 hours (15.4 ± 3.14) compared to the lowest (8.9 ± 3.28), (p = 0.04). Also fatty acid oxidation had the highest value at 24 hours (9.2 ± 2.56) compared to the lowest (4.7 ± 2.45), (p = 0.07).

**Conclusion:** The muscular mitochondrial respiratory capacity improves already after one bout of ischemic preconditioning in claudicants. Calf raise exercise with five extra repetitions after initiation of pain might therefore be an alternative to reach specific “mitochondrial training” of the gastrocnemius muscle. This concept is promising and might be a new conservative approach to intermittent claudication; leading to a decrease of necessary vascular interventions.

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**Influence of Microbiology and Wound Scores in the Diabetic Foot Syndrome Outcome**

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**Introduction:** The diabetic foot syndrome (DFS) is an important complication of DM resulting very often in amputation, disability and reduced quality of life. Little is known about the relationship between the different wound classifications and the microbiology of DFS. We aimed to identify accurate predictors to establish the best empiric therapy and to reduce the rate of amputations.

**Methods:** Prospective study of 250 consecutive patients diagnosed of DFS from January 2009 to September 2013 attended at our institution. Tissue samples for culture were obtained at admission and 48 hours after. Wound classification scores were recorded at admission and a re-evaluation was performed 48 hours after.

**Results:** Median age was 66 years (22—91), being male 199 patients (80%). Hundred and five patients had received antibiotics prior to hospital admission and 162 (65%) had femoro-popliteal or tibial ischemia. Osteomyelitis was present on plain X-ray in 51 patients (36%). Infection was mono-microbial in 131 patients (52%). Staphylococcus aureus was the most frequent pathogen (76 patients, 30%); being MRSA in 26% (20/76) E. coli and E. faecalis were 2nd and 3rd most frequent pathogens. Two hundred and nine patients (85%) needed amputation being major in 25 patients (10%). Seven patients (3%) died during hospitalization. After one year of follow-up, 51 patients (21%) were readmitted because of worsening and 38 needed minor or major amputation.
Associated risk factors for amputation were Wagner score ≥3; TEXAS score ≥2B and PEDIS score ≥2 (p < 0.05). No microorganism was associated with amputation, although Staphylococcus aureus and Gram Negative Bacilli were the ones with greater amputation rate or severity score (PEDIS, Wagner, TEXAS) at admission. Medium length of stay was 19 days.

Staphylococcus aureus infection was associated with a prolonged length of stay (25 days, p = 0.04). Overall, 74% of gram positives were sensitive to quinolones and 98% to vancomycin and 90% of gram negatives to cefotaxime and 95% to carbapenems. Conclusion: TEXAS, PEDIS and Wagner wound classification can predict outcome. MRSA infection was associated with a longer stay. Empiric therapy with a combination of vancomycin and carbapenem will result in coverage of most pathogens involved in DFS.

Minimum 10-Year Follow-up of Endovascular Repair for Acute Traumatic Transection of the Thoracic Aorta
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Introduction: Thoracic endovascular aortic repair (TEVAR) for traumatic rupture of the descending thoracic aorta (DTA) appears, in the short term, to be associated with better outcome, but long term data is still lacking.

Methods: A review of a prospectively maintained database of patients who underwent TEVAR for traumatic rupture of the DTA in our unit with a minimum 10-year follow-up was performed. Follow-up computed tomography scans were performed at 1 week, at 3 and 6 months, and annually thereafter. Particular attention was focused on device related issues.

Results: Among the 53 patients who underwent TEVAR for an acute traumatic rupture of the DTA, 17 of them were at a minimum 10-year follow-up: mean age 45.8 ± 17 years [18–78], 4 women. Mean follow up was 11.6 years (range: 10.1–13.1 years). Technical success was achieved in 100% (Excluder-TAG [7], Talent [9], Zenith [1]). The distribution of the proximal landing zone was zone 2 in 4 cases, zone 3 in 13 patients. A case of inadvertent coverage of supra-aortic trunks occurred intra-operatively. An early proximal type I endoleak was successfully treated by a proximal implantation of a second stent-graft. No perioperative death was observed and none of the patients suffered transient or permanent paraplegia, cerebral complication. At a minimum 10-year follow-up, all the patients are still alive. Furthermore, follow-up computed tomography scans did not disclosed any stent-graft migration or collapse, secondary endoleak or pathologic enlargement of the thoracic aorta.

Conclusion: Our minimum 10-year follow-up study of endovascular repair for acute traumatic transection of the thoracic aorta demonstrated that the improved operative mortality of TEVAR over open, lasts over time without any device or procedure related issues.

The Influence of Diabetes Mellitus and Insulin Use on the Prevalence of AAA Among Patients Referred for Peripheral Artery Disease
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Introduction: The prevalence of abdominal aortic aneurysm (AAA) is known to be less among patients with diabetes mellitus (DM). This is supposed to be a result of a greater arterial wall thickness which reduces wall stress. The question is whether or not this protective effect can be found among patients with suspected peripheral artery disease (PAD) who were referred to the vascular surgeon. Methods: From January 2008 till December 2012, 1956 patients with suspected PAD were referred to the vascular surgeon. After exclusion, 1697 patients, 971 men, with an average age of 68 years, were successfully screened with duplex for AAA. Their relevant patient characteristics were retrospectively gathered (sex, age, smoking habits, cardiovascular or cerebrovascular history, hypertension, DM, COPD, dyslipidemia, medication use, Ruth-erford classification and ankle brachial index).

Results: In the screened group, 24.5% has DM and 38% of these patients use insulin. The prevalence of AAA in the screened group is 7.0% (118 patients). Among the patients with an AAA 19.5% has DM (23 patients). Four patients with an AAA use insulin. Male sex (OR 3.1 CI 1.95–4.98), higher age (OR 11.53 CI 8.0–34.73) and smoking (OR 2.9 CI 1.82–4.73) had an independent positive influence on the variability and the prevalence of AAA in a multivariate analysis. Insulin use appears to have an independent and significant negative influence on the development of AAA (OR 0.3 CI 0.12–0.90).

Conclusion: In the screened group, DM and the use of oral anti-diabetic agents have no significant relationship with the presence of AAA. However, AAA is significantly less present among those patients who use insulin. The protective effect of DM on the prevalence of AAA, as seen in the literature, might actually be dependent on the use of insulin. This effect could be explained by the fact that patients who use insulin usually have more progressed disease, which has had more influence on the vascular status of the patient. Another possibility is that the lower prevalence of AAA in patients with DM, described in the literature, does not depend on the disease itself, but on the effects of insulin use.

Effects of Preconditioning and Post Conditioning Statin Treatment on Skeletal Muscle in a Murine Model of Critical Limb Ischemia
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Introduction: Statins are widely used in the prevention of cardiovascular events, but may cause deleterious effects especially muscle pain. We wanted to investigate the effect of statins on mitochondrial skeletal muscle system in our murine model of critical limb ischemia, depending on whether the treatment is initiated before or after the onset of critical ischemia.

Methods: 30 Swiss mice, 8 weeks old, divided into 3 groups: 1 control group (n = 10), one preconditioning group treated with statins 30 days before ischemia until sacrifice (n = 10), and one post-conditioning group treated with statins 6 days after ischemia until sacrifice (n = 10).

Operating protocol: ligation of the right femoral artery (Day 0), followed by ligation of the right iliac artery (Day 4). The left lower limb was considered as control. Gastrocnemius muscles were analyzed at sacrifice (Day 30): mitochondrial respiration and production of free radicals in the control limb (CL) and ischemic limb (IL) were examined in the 3 groups.

Results: Analysis of control group muscles showed (IL vs CL):
- An impairment of mitochondrial respiratory chain characterized by a decrease in the maximum rate of oxygen consumption (Vmax) by mitochondria (reflection of ATP production): 7.11 ± 1.14 vs. 9.86 ± μmol02/min/g 0.86 (p < 0.001).