included main pre-, intra- and postoperative parameters. Independent neurological assessment with National Institute of Health Stroke Scale (NIHSS) score calculation was performed before the operation and within the 30th postoperative day.

Early (<30 days) results were evaluated in terms of mortality, modifications in NIHSS values and stroke and death rates. The surveillance program consisted of clinical and ultrasonographic examinations at 1, 6 and 12 months and yearly thereafter. Follow-up results (survival, occurrence of ipsilateral stroke in TIA group, recurrence of stroke in stroke group) were analysed by Kaplan–Meier curves.

Results: Among patients presenting with TIA, 28 had crescendo TIAs and 23 had a recent TIA; In stroke group, two patients had a stroke in evolution, eight patients had a recent major non-disabling stroke and 14 patients had a recent minor stroke.

Preoperative mean value of NIHSS score in stroke group was 4.7 (SD 3.2).

There were 2 perioperative (<30 days) deaths, both in stroke group, in one case due to acute respiratory failure and to fatal stroke in the other one (preoperative NIHSS value 9, postoperative 17), with a cumulative 30-day mortality rate of 2.7%, significantly higher in stroke group (8.3%) than in TIA group (no death, $p = 0.03$). No postoperative cerebral haemorrhage occurred.

In TIA group one postoperative major stroke occurred, with a 30-day stroke and death rate of 1.9%.

In surviving patients of stroke group NIHSS value improved in 13 cases, with a mean improvement of 2 points (SD 0.9); in 8 cases the value remained unchanged, while in the remaining case it increased from 2 to 4. Mean postoperative NIHSS score in stroke group was 3.9 (SD 3.7), significantly reduced in comparison with preoperative value ($p < 0.001$).

Mean duration of follow-up was 34 months (SD 28.1). No ipsilateral stroke in patients of TIA group occurred; in stroke group a recurrent fatal stroke at 1 postoperative month was recorded. Estimated 48-month stroke-free survival rate TIA group was 95% and 79% in stroke group ($p = 0.02$).

Conclusions: Urgent CEA in patients with recent/crescendo TIA provided in our experience excellent results, with low rates of perioperative and late stroke. In selected patients with acute stroke early surgery seems to provide acceptable results.

Patients' Radiation Doses During the Implantation of Stents in Carotid, Renal, Iliac, Femoral and Popliteal Arteries

Majewska N., Blaszak M.A., Juszkat R., Frankiewicz M., Makalowski M., Majewski W. Eur J Vasc Endovasc Surg 2011;41:372-7.

Objectives and Design: The aim of the study was to document the radiation doses to patients during the implantation of stents in various arteries and to discuss potential reasons for prolongation of radiological procedures.

Materials and Methods: Measurements of air kerma (Gy) and dose–area product (Gy cm^2) (DAP) were carried out simultaneously on a sample of 345 patients, who underwent different interventional radiological procedures involving angioplasty with stenting of 73 carotid (21.5%), 22 renal (6.5%), 160 iliac (45%), 63 femoral (18.6%) and 27 popliteal (7.9%) arteries.

Results: The highest mean air kerma values for fluoroscopy and exposure were found for renal angioplasty (340 and 420 mGy, respectively). With regard to total DAP values, the highest were obtained for renal (148 Gy cm^2) and iliac/The Inter-Society Consensus for Management of Peripheral Arterial Disease (TASC) II C (199 Gy cm^2) stent implantation. The lowest values were for carotid (53 Gy cm^2), iliac/TASC II A (6.3 Gy cm^2) and femoral/TASC II A (53 Gy cm^2) arteries. For 3.5% of the patients, the air kerma was between 1 and 1.5 Gy and for 1.5%, it was between 1.5 and 2 Gy.

Conclusions: In procedures performed on the arteries of the lower limbs, a significantly higher dose was received by patients with TASC II C lesions. With regard to the number of stents implanted, the total DAP value was 50% higher for simultaneous three-stent implantation than for one or two stents.

A Systematic Review of Free Tissue Transfer in the Management of Non-traumatic Lower Extremity Wounds in Patients with Diabetes

Fitzgerald O'Connor E.J., Vesely M., Holt P.J., Jones K.G., Thompson M.M., Hinchliffe R.J. Eur J Vasc Endovasc Surg 2011;41:391-9.

Objectives: Wounds of the lower limb in patients with diabetes are frequently difficult to heal. Some wounds fail to heal despite optimal medical and surgical care. This review examines the evidence for whether free tissue transfer techniques may reduce the requirement of amputation in these patients.

Design: A systematic review.

Materials & Methods: Pubmed, Embase, AMED, SCOPUS and CINAHL and Cochrane Library were searched for all articles on free tissue transfer in lower limb wounds in patients with diabetes (September 2010). Current experience, indications and outcomes were analysed.

Results: 528 patients from 18 studies were included in the systematic review. 66% of patients had concomitant revascularisation with bypass surgery. 63% of flaps were muscle based, 35% fasciocutaneous and 1.7% omental. Pooled in-hospital mortality rate was 4.4%, flap survival was 92% and limb salvage rate of 83.4% over a 28 months average follow-up time.

Conclusions: In conclusion free tissue transfer achieves successful wound healing in selected patients with diabetes and difficult to heal wounds that would have required amputation. Pre-operative optimisation of vascular supply and eradication of infection is key to success. Objective wound assessment scores and a clear multidisciplinary team (MDT) approach would improve patient care.

Does Puncture Site Affect the Rate of Nerve Injuries Following Endovenous Laser Ablation of the Small Saphenous Veins?

Doganci S., Yildirim V., Demirkilic U. Eur J Vasc Endovasc Surg 2011;41: 400-5.

Objectives: The small saphenous vein (SSV) lies in close relationship with sural nerve and is at risk of damage during surgery or vein ablation procedures on this vein. The aim of this study was to compare the effect of puncture site for SSV endovenous laser ablation (EVLA) on the rate of post-operative sural nerve injury.

Design: Randomised controlled study.

Patients and Methods: Sixty patients with isolated SSV varicose veins (68 limbs) were randomised into two groups. All patients were treated with endovenous laser ablation procedures using radial fibres and a 1470 nm diode laser. In Group 1, SSVs were canulated from lateral malleolar part of the SSV. In Group 2, SSVs were canulated in the mid-calf. EVLA procedures were performed by using 12 W energy and 70 J cm^{-1} LEED (linear endovenous energy density). Local pain, ecchymosis, induration and paraesthesia in treated regions, vein diameter, treated vein length, tumescent anaesthesia volume, delivered energy were recorded. Follow-up visits were arranged on the 2nd post-operative day, 7th day, 1st, 2nd, 3rd and 6th months.

Results: The mean SSV diameters at sapheno-popliteal junction (SPJ) and calf levels were Group 1 SPJ: 6.6 S.D. 1.2 mm, Calf: 5.1 S.D. 1.1 mm, and Group 2 SPJ: 6.8 S.D. 1.6 mm, Calf: 4.9 S.D. 1.3 mm. Adverse events after treatment were 1 patient with induration, 3 with ecchymosis and 6 minimal paraesthesia in Group 1 (malleolar) and 1 local pain, 4 minimal ecchymosis or induration and 1 paraesthesia in Group 2 (mid-calf). In Group 1 in two patients the paraesthesia lasted 2 months and then resolved spontaneously. In the remaining four patients' paraesthesia resolved in less than 1 month without treatment. In Group 2 paraesthesia resolved spontaneously in two weeks. Induration, ecchymosis and local pain also resolved in less than 2 weeks in both groups. There was no recanalisation or reflux in the treated SSV of either group during the follow-up period.

Conclusion: Treatment of the SSV by endovenous laser ablation using a 1470 nm laser and a radial fibre is safe and effective. Puncturing the vein at mid-calf level causes less post-operative nerve injury without affecting the recanalisation rates.

T-cell-pre-stimulated Monocytes Promote Neovascularisation in a Murine Hind Limb Ischaemia Model

Hellingman A.A., Zwaginga J.J., van Beem R.T., TeRM/Smart Mix Consortium, Hamming J.F., Fibbe W.E., Quax P.H.A., Geutskens S.B. Eur J Vasc Endovasc Surg 2011;41:418-28.

Aim: Monocytes play a significant role in neovascularisation. The stimuli that differentiate monocytes along a pro-angio-/arteriogenic-supporting pathway are currently unclear. We investigated whether pre-stimulation of human monocytes with soluble T-cell-derived factors improves revascularisation in murine hind limb ischaemia as a new option for therapeutic angio- and arteriogenesis.

Design: Human monocytes were cultured with or without soluble T-cell-derived factors. Unstimulated and pre-stimulated monocytes were transfused after induction of hind limb ischaemia in nude mice.

Methods: Blood flow was measured with laser Doppler perfusion imaging. Collaterals were visualised by immunohistochemistry and angiography. Monocytes were characterised by flowcytometry and Bio-Plex assays.

Results: Transfusion of T-cell-pre-stimulated monocytes significantly improved blood flow recovery after hind limb ischaemia and increased collateral size and collateral and capillary number in the post-ischaemic paw. Pre-stimulated monocytes produced a wide variety of factors that support neovascularisation such as platelet-derived growth factor-BB, vascular-endothelial growth factor, interleukin-4 and tumour necrosis factor-α. Few transfused human cells were detected in the muscle tissue, suggesting that paracrine rather than direct effects appear responsible for the enhanced recovery of blood flow observed.

Conclusion: These results show a beneficial role for T-cell-pre-stimulated monocytes in neovascularisation, rendering the monocyte a potential candidate for regenerative cell therapy that promotes revascularisation in peripheral arterial disease patients.