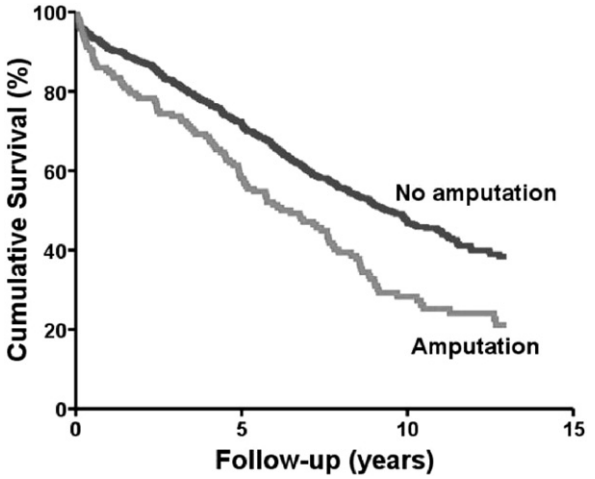
Limb amputation after failed bypass surgery is a feared complication and might affect prognosis negatively. We aimed to identify and assess the prognosis of patients requiring an amputation after previous arterial revascularization.

Methods: For 834 patients who underwent peripheral arterial revascularization for limb ischemia, cardiovascular risk factors, medication use and postoperative complications were noted. During a median follow-up of 6.8 years limb and survival status were noted. Major amputation was defined as amputations above the ankle. Survival status was assessed by contacting the civil service registry. The primary end-point was all-cause mortality.

Results: A total of 834 patients were analyzed of which 194 (23%) underwent a reoperation. During follow-up major amputations were necessary in 161 (19%) patients. Patients who required amputation were more likely to be smokers, had more cardiac risk factors and had more perioperative complications during the index procedure. Statin use was associated with a 35% relative risk reduction for major amputation. In univariate analysis patients who required an amputation had a 1.6 fold increased risk for mortality (figure). After adjusting for underlying cardiac risk factors and medication use, amputation was still associated with a 1.3-fold increased risk for mortality (95% CI 1.0-1.6, p=0.02).

Conclusion: Patients who require a limb amputation during follow-up after peripheral arterial revascularization have a worse prognosis compared to patients who remain amputation-free.



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PP47.

Impact of Reduced Endogenous Anti-coagulation Protein Activity on Vascular Events of Peripheral Arterial Disease

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Objectives: To elucidate the prevalence and the prognosis of patients with peripheral arterial disease (PAD) who have reduced endogenous anti-coagulation protein activity in the Japanese population.

Methods: 96 patients with PAD were studied, including 45 patients with intermittent claudication and 51 with critical limb ischemia. Among them 65 patients undertook a peripheral artery bypass grafting and were followed for the mean period of 26 ± 31 months. Venous blood samples were obtained and plasma activity level and antigen titer of Protein C (PC), Protein S (PS), Plasminogen (PLG), Antithrombin (AT) were measured. Based on the patients' clinical database the prevalence and clinical relevance was studied.

Results: Result 1. In our PAD patients PC activity is reduced in 18.8%, PS activity is reduced in 16.7%, PLG activity was reduced in 15.6% and AT activity was reduced in 24.0%. The incidence of AT activity deficiency was significantly higher in patients with critical limb ischemia than patients with claudication ($p<0.01$). Result 2. After revascularization, 1, 3 and 5 year event free rate of patients with PC or PS activity deficiency are 53, 30, 15%, respectively, whereas those of patients without PC and PS deficiencies are 80, 64, 38%, being significantly higher rates ($p<0.05$, Mantel-Cox test). Also, 1, 3 and 5 year event free rate of patients with PLG activity deficiency are 38, 0, 0%, respectively, and those of patients without PLG activity deficiency are 79, 62, 34%, being significantly higher ($p<0.01$, Mantel-Cox test). Result 3. The percentage of thromboembolic episodes was significantly high in patients with reduced PC activity compared with those with normal PC activity (29.4% vs 7.6%, $p<0.05$). Result 4. Patients with PC activity deficiency were more susceptible to leg amputation (6 patients, 35.3% of patients with deficiency) than those without (10 patients, 12.7% of patients without deficiency) ($p<0.01$).

Conclusions: The PAD patients with reduced endogenous anti-coagulation proteins shows worse prognosis than those without. Surgeons must be aware of it to improve the outcome of arterial revascularization.

Author Disclosures: H. Komai, None; **H. Shigematsu,** None; **M. Juri,** None.

PP48.

Chronic Atherosclerotic Occlusion of the Abdominal Aorta: A Contemporary Experience of Open Abdominal Aortic Reconstruction

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Objective: Chronic atherosclerotic abdominal aortic occlusion (CAAAO) is a rare and complex form of aortic disease. Few modern series reviewing abdominal aortic reconstruction for CAAAO exist. Thus, we sought to examine a current experience reviewing surgical techniques and outcomes.

Methods: Between January 1997 through December 2008, 51 patients with CAAAO were identified and retrospectively reviewed. CAAAO's were categorized into pararenal aortic occlusions (PRAO's) and infrarenal aortic occlusions (IRAO's) based on superior extension of thrombus and requirement for supra-renal aortic clamping (SR-AC). Mortality, morbidity, hospital stay and operative variables were assessed. Univariate analyses were performed to test for associations between operative variables and primary outcomes.

Results: Fifty patients were treated. 47 underwent aortic reconstructions with aorto-bifemoral or iliac (ABF-I) bypass and 3 had axillo-bifemoral (AXBF) repairs. There were 32 males, 18 females (mean age 53 years, range 32-72). Severe claudication was present in 32, 17 had critical limb ischemia (CLI) and 1 presented with ARF. There were 31 PRAO's and 20 IRAO's. IRAO's had infrarenal clamps (IRC) and aortic engraftment. In PRAO's, (SR-AC) was employed with aortorenal- thromboendarterectomy (AR-TEA) in (24/30) 76%, 3 AR-TEA's were blind with IRC and 3 AXBF's were performed. Of PRAO's with AR-TEA, repairs were end-to-end: 14 sewn to the renal bearing aorta; 10 were infrarenal after longitudinal pararenal aortotomy, AR-TEA and primary aortic closure. Renal revascularization was required in only 12% (6/50). Operative mortality at 30 days was 0. Cardiopulmonary dysfunction occurred in 4 (8%). Post-operative renal insufficiency was found in 10 (20%). Temporary dialysis was required in 1 (2 %). Those with renal insufficiency in the post-operative period recovered to baseline at discharge. Median ICU and hospital stay were 3 and 7 days respectively. Analysis reveals associations only between prolonged hospital stay and intra-operative blood replacement ($p = 0.001$).

Conclusion - Abdominal aortic reconstruction is a safe method for treating CAAAO. In CAAAO, SR-AC followed by AR-TEA and aortic replacement is an effect solution for pararenal aortic disease and can be performed without significant renal impairment.

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PP49.

Clinical Outcome of Acute Leg Ischemia Due to Thrombosed Popliteal Artery Aneurysms; Systemic Review of 895 Cases

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Objective: Acute thrombosis of a popliteal artery aneurysm (PAA) often results in critical limb ischemia of sudden onset, with a compromised, disastrous runoff, making direct revascularization hazardous. Pre-operative thrombolysis may simplify or even make arterial repair redundant by reopening crural arteries and restore the outflow. Systemic review was performed to study clinical outcome of both treatment modalities.

Methods: A systemic review was conducted of data on thrombosed popliteal artery aneurysms in the English literature from 1990 using the Pubmed and MEDLINE electronic databases up to Jun 30rd 2008.

Results: The literature search identified no randomized trials, 8 prospective studies, and 25 retrospective studies on the management of acute