diagnosis of segmental arterial media disease. CT angiography may reveal areas of stenosis, dissection, and/or aneurysm with normal appearing segments of arterial vessel interspersed and other vascular beds appearing normal. Conventional angiography is useful in those cases where less invasive imaging is ambiguous. The gold standard for diagnosis remains histopathology, especially in differentiating lesions from polyarteritis nodosa (P.A.N.), where inflammation is present with P.A.N., but not with S.A.M. However, not all patients will undergo biopsy or surgery for histological confirmation and therefore imaging remains important in the diagnosis and immediate management. Initial treatment is geared towards stabilization of an unstable patient presenting with circulatory collapse from hemorrhage. Given the lack of demonstrable inflammation, corticosteroids have no proven benefit. Emergency cell reformation or urgent surgical repair may be required for leaking aneurysms with hemorrhage. Patients may undergo partial small bowel resection for areas that cannot be successfully revascularized. Surgical arterial reconstruction for aneurysmal disease may be indicated. In patients with thrombosis to vital organs secondary to arterial dissection, anti-platelet therapy and anticoagulation therapy are controversial given the tendency towards arterial rupture and hemorrhage.

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Predictors and impact of peripheral arterial disease in hemodialysis patients: insights from a prospective cohort study with a 3-year follow-up.

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Aim. Limited available data report that peripheral arterial disease (PAD) is prevalent in hemodialysis (HD) patients. Objectives: to evaluate the prevalence and impact of PAD among HD patients.

Methods. A prospective cohort study was conducted on patients undergoing regular hemodialysis in the Middle of 2007 with a 3-year follow-up. Patients were divided into 2 groups (Non-PAD versus PAD) based on the clinical assessment and ankle-brachial index. Association between baseline variables and PAD was performed by logistic regression analysis. Cox regression model was used to test the association between PAD and 3-year all-cause mortality.

Results. Among 252 consecutive HD patients, PAD was diagnosed in 72 patients (28.9%). In comparison to non-PAD, PAD patients were younger and were more likely to be female and to have diabetes mellitus, prior coronary artery disease (CAD) and cerebrovascular disease. They were less likely to be smokers. PAD patients were more frequently on prior antiplatelet and insulin therapy. Baseline serum parathyroid, phosphorus, lipid profile and hemoglobin were comparable between the 2 groups. Although serum calcium was higher in PAD group (P=0.04). Diabetic retinopathy was independent predictor for PAD (adjusted OR 2.7; 95% confidence interval: 1.06 to 5.45). There was no significant difference in the number and nodularity of vascular access between the 2 groups. Three-year all-cause mortality was higher in PAD group (48% vs 14%; P=0.001) even after adjusting for covariates (Hazard ratio 2.82, P<0.001). Predictors for mortality also included age (H.R 1.07, P=0.001), number of vascular access (H.R 2.3, P=0.004), and prior CAD (H.R 1.8, P=0.04).

Conclusion. Prevalence of PAD is high in HD patients in Qatar. PAD and number of access are important independent predictors of long-term mortality in HD. Primary prevention, control of risk factors and early detection of PAD are highly recommended. PAD may shape our strategy for vascular access in HD.

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Myocardial Infarction after carotid stenting and endarterectomy. Results from the Carotid Revascularization Endarterectomy Versus Stenting Trial

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Aim. The Carotid Revascularization Endarterectomy Versus Stenting Trial (CREST) showed a higher risk of stroke after carotid artery stenting and a higher risk of myocardial infarction (MI) after carotid endarterectomy. Investigators of the CREST Trial recently reported these data on myocardial infarction in.

Methods. Cardiac biomarkers and ECGs were performed before and 6 to 8 hours after each procedure and if there was clinical evidence of ischemia. In CREST, MI was defined as biomarker elevation plus either chest pain or ECG evidence of ischemia. An additional category of biomarker elevation with neither chest pain nor ECG abnormality was proscribed (biomarker only). Crude mortality and risk-adjusted mortality for MI and biomarker only were assessed at follow-up.

Results. Among 2502 patients, 14 MIs occurred in carotid artery stenting and 28 MIs in carotid endarterectomy (hazard ratio, 0.59; 95% confidence interval, 0.26 to 0.94; P=0.032) with a median biomarker ratio of 40 times the upper limit of normal. An additional 8 carotid artery stenting and 12 carotid endarterectomy patients had biomarker only (hazard ratio, 0.66; 95% confidence interval, 0.27 to 1.61; P=0.36), and their median biomarker ratio was 14 times the upper limit of normal. Compared with patients without biomarker elevation, mortality was higher over 4 years for those with MI (hazard ratio, 3.40; 95% confidence interval, 1.67 to 6.92) or biomarker only (hazard ratio, 3.57; 95% confidence interval, 1.46 to 8.60). After adjustment for baseline risk factors, both MI and biomarker only remained independently associated with increased mortality.

Conclusion. In patients randomized to carotid endarterectomy versus carotid artery stenting, both MI and biomarker only were more common with carotid endarterectomy. Although the levels of biomarker elevation were modest, both events were independently associated with increased future mortality and remain an important consideration in choosing the mode of carotid revascularization or medical therapy.

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Higher CD34+ cells concentration and lower degree of inflammation are associated with better therapeutic response to autologous bone marrow cell applications in patients with critical limb ischemia

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Aim. The aim of our study was to analyze factors associated with the beneficial therapeutic effect of autologous bone marrow cells (BMCCs) applications in patients (pts) with critical limb ischemia (CLI).

Methods. Forty-one patients (age 65±10 years, M/F: 26/15) with advanced CLI (Rutherford category 5-6) not eligible for revascularization were randomized to treatment with 40ml of BMCC either using local IM (n=21) or selective IA infusion (n=20). Primary endpoints were limb salvage and wound healing. Secondary endpoints included changes in transcutaneous oxygen pressure, quality of life questionnaire (EQ-5D), ankle-brachial index, and pain scale (0-10). Patients with limb salvage and wound healing were considered as responders to BMCC therapy.

Results. At 6-month follow-up, in the entire cohort the limb salvage was 79% (27/37), four pts died unrelated to stem cells therapy. At univariate analysis, the CD34+ cells count >20x10^6 was associated with a positive therapeutic response to BMCC therapy (p=0.015, OR 4.7; 95% CI 1.19-19.24), and peripheral blood leukocytes count >10x10^9/L was associated with negative therapeutic response (p=0.006, OR 2.1; 95% CI 1.06-4.11), as well as CRP level >1mg/L (p=0.038, OR 1.54; 95% CI 1.01-2.32). By multivariate analysis the number of administered CD34+ cells >20x10^6 emerged as an independent predictor of clinical benefit after BMCC application (p=0.03) with 80% specificity and 65% sensitivity. Importantly, there were no differences in IM versus IA application after 6 months in all observed parameters.

Conclusion. Higher CD34+ cells concentration, and lower degree of inflammation are associated with better clinical therapeutic response to BMCC therapy in pts with CLI. Both IM and IA cells delivery are effective and comparable therapeutic strategies.

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