

PP93.

Do Quality of Life (QOL) Index Scores Truly Reflect the Degree of Clinical Improvement Following Intervention in Patients With Intermittent Claudication due to Femoro-Popliteal Disease? Results of an Observational Study

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Objectives: To establish the relationship between quality of life (QOL) index scores and clinical indicators of lower limbs ischaemia.

Methods: 178 patients (108 men, median age 70 years) with angioplastiable femoro-popliteal were recruited. Assessments were done prior to and at 1, 3, 6 and 12 months following intervention (angioplasty and / or supervised exercise programme). Clinical indicators of lower limb ischaemia (treadmill walking distances, ankle pressures), generic (SF36, EuroQol) and disease specific (Kings College VasculQol) quality of life questionnaires were analysed. Correlation analysis was performed for index scores as well as individual domain scores using non-parametric tests.

Results: All clinical indicators of lower limb ischaemia and quality of life index scores showed a statistically significant improvement as result of intervention (Friedman test, $p < 0.005$). All generic QOL index scores (SF36, EuroQol) showed moderate but statistically significant correlation with treadmill walking distances (Spearman rank correlation, $r = 0.523$, $p < 0.005$) and weak but significant correlation to resting ankle brachial pressure index ($r = 0.153$, $p = 0.005$). No significant correlation was seen between post exercise ABPI and generic QOL index scores ($r = 0.033$, $p = 0.547$). Disease specific QOL index scores showed similar moderate correlation to the treadmill walking distances ($r = 0.584$, $p < 0.005$) and a weak but statistically significant correlation with resting and post exercise ABPI ($r = 0.378$, $p < 0.05$). All domains of SF36 showed similar results with strongest correlation seen in the domains of physical function ($r = 0.538$, $p < 0.005$) and bodily pain ($r = 0.524$, $p < 0.005$).

Conclusion: All generic and disease specific QOL scores show statistically significant improvement with intervention in patients with femoro-popliteal claudication. However, the degree of improvement seen in clinical indicators of lower limb ischaemia shows a weak correlation to these scores. Therefore, a combination of clinical and QOL indicators should be used to report outcome for intervention studies in these patients.

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PP94.

Office-Based Outpatient Angiosuites: A Paradigm for a Safe, Effective, and Efficient Endovascular Practice

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Purpose: To demonstrate that therapeutic and diagnostic endovascular procedures, traditionally performed in an outpatient hospital setting, can be done with equal or better safety, efficacy and efficiency in an office setting.

Method: From April 25, 2006 to October 31, 2008, we performed 422 endovascular procedures in our office-based outpatient angiosuite. This represents 28.3% of total patients who underwent endovascular procedures in both the hospital and office. There were 213 (50.47%) men and 209 (49.52%) women, with an average age of 60.85 years (range: 17 to 93; SD: 15.89 years). Risk factors included arrhythmia (n=21, 4.98%), coronary artery disease (n=108, 25.59%), congestive heart failure (n=24, 5.69%), diabetes (n=165, 39.10%), dialysis (n=78, 18.48%), hyperlipidemia (n=94, 22.27%), hypertension (n=272, 64.45%), COPD (n=23, 5.45%), TIA/CVA (n=23, 5.45%), and history of MI (n=47, 11.14%). ASA classifications were I (n=34, 8.05%), II (n=73, 17.30%), III (n=238, 56.40%), and IV (n=60, 14.22%), with 17 (4.03%) unavailable.

Results: We performed 134 (31.75%) diagnostic angiograms, 204 (48.34%) balloon angioplasties, 72 (17.06%) angioplasties with stent placements, and 6 (1.42%) coil embolizations. All procedures were performed under local anesthesia with anesthesia standby. The planned procedures were completed in 97.87% (n=413) patients. The complication rate was 2.13% (n=9). Of these, 6 were electively admitted (2 thromboemboli, 2 hematomas, 1 malignant hypertension, 1 neuroangio edema) and 1 required emergency transfer. The reason for transfer was a torn common femoral vein upon attempted retrieval of a migrated stent. 30-day mortality was 0.46% (n=2), both unrelated to the procedures.

Conclusion: With careful patient selection and technique, therapeutic and diagnostic endovascular procedures can be safely, effectively, and efficiently performed in an office setting.

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PP95.

Factors Associated with Aspirin-Insensitive Thromboxane Generation in Patients with Atherosclerosis

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Objective: Measurement of the thromboxane A₂ metabolite, 11-dehydro-thromboxane B₂ (TXB₂), is used to assess response to aspirin therapy and to define patients who are "aspirin resistant." Little is known about factors that may contribute to persistent TXB₂ generation in spite of adequate suppression of platelet COX-1 activity by aspirin.

Methods: 284 subjects with confirmed inhibition of arachidonic acid (AA)-induced platelet aggregation by chronic aspirin therapy were tested for urine TXB₂. All patients had undergone CABG 6 months previous. Simultaneous hematologic (complete blood count, reticulated platelet count, ABO blood group), inflammatory (C-reactive protein, fibrinogen, von Willebrand factor) and oxidative stress measurements (urine 8-iso prostaglandin F_{2α}) were performed. Demographic, medical history and pharmacological factors were also considered. A multivariate model was created to predict odds of urinary TXB₂ ≥ 400 pg/mg creatinine (Cr).

Results: Despite complete inhibition of AA-induced platelet aggregation, 95/284 (33.5%) subjects had TXB₂ ≥ 400 pg/mg Cr. Multivariate analysis identified several factors associated with odds of high TXB₂, shown below in descending order of strength of evidence:

Predictor for urinary TXB ₂ ≥ 400 pg/mg creatinine	Odds ratio	P value
Urine 8-iso-prostaglandin F _{2α} (≥ 1072 vs. < 1072 pg/mg creatinine)	3.73	0.000
Race (white vs. non-white)	0.16	0.001
Beta-blocker use	0.28	0.005
Leukocyte count (< 4.5 vs. 4.5 - 11 × 10 ³ /cubic mm)	0.13	0.008
Gender (female vs. male)	2.66	0.017
History of congestive heart failure	2.98	0.021
Age (per additional year)	1.04	0.027
von Willebrand factor antigen (> 150 vs. ≤ 150%)	2.12	0.034
Aspirin dose (325 mg vs. 81 mg)	0.34	0.045
Leukocyte count (> 11 vs. 4.5 - 11 × 10 ³ /cubic mm)	4.04	0.346

Conclusions: Persistent thromboxane generation occurs in a substantial percentage of patients 6 months after surgery despite suppression of platelet COX-1 activity by aspirin. Non-white race, female gender, advanced age and heart failure appear to be important patient-specific factors associated with increased aspirin-insensitive thromboxane generation. In addition, elevated urine thromboxane levels were significantly associated with beta-blocker use and degree of oxidative stress and inflammation. These latter findings suggest that metabolism of arachidonic acid via non-enzymatic and/or COX-2-mediated pathways may be important contributors to aspirin-insensitive thromboxane generation.

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PP96.

Patterns of Procedure Specific Radiation Exposure in the Endovascular Era: Impetus for Further Innovation

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Objective: While patient preference and outcome data support continued development and utilization of minimally invasive endovascular therapies, only a few studies have documented radiation exposure to the patient. This report summarizes our patient's radiation exposure per endovascular procedure.