

ENDOVASCULAR

CRITICAL LIMB ISCHEMIA

CRT-300

Prevalence Of Acute Kidney Injury In Critical Limb Ischemia Patients

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BACKGROUND Although the prevalence of acute kidney injury (AKI) associated with acute coronary syndrome management is well-described, similar knowledge regarding AKI in patients being treated for critical limb ischemia (CLI) is poor. We determined the prevalence of and clinical characteristics associated with AKI in patients admitted with CLI undergoing revascularization.

METHODS We prospectively studied 189 patients presenting to a single academic medical center with CLI, defined as Rutherford class IV-VI. Patients underwent either lower extremity bypass surgery or endovascular intervention. Demographics, procedural and clinical variables were collected. Patients were followed for the occurrence of AKI as well as major adverse cardiac and limb events. AKI was diagnosed based on changes in serum creatinine during the hospitalization in accordance with AKIN criteria, defined as either a 1.5 fold increase or 0.3 mg/dL absolute increase in serum creatinine (Cr) from baseline. Comparisons between the two groups were performed using Fischer exact and t-testing.

RESULTS Of the 115 patients included in the analysis, 31 patients (27%) developed AKI. 74 patients were excluded because they did not undergo a bypass or endovascular procedure or they were on dialysis. There was no difference in demographic or clinical characteristics between patients who did and did not develop AKI. Compared to those who did not develop AKI, patients who developed AKI had on average a longer length of hospital stay (16d vs. 29d, $p < 0.01$) and a longer length of ICU days (2d vs. 7d, $p = 0.04$). In addition to significantly higher peak Cr values (2.8 vs. 1.1, $p < 0.01$), patients who developed AKI also had significantly higher discharge Cr values compared to those who did not develop AKI. The development of AKI in the bypass versus endovascular groups approached statistical significance (36% vs. 21%, $p = 0.06$). There was no significant difference in adverse inpatient cardiac and limb events between individuals who did and did not develop AKI.

CONCLUSION The development of AKI is common in individuals admitted for CLI and is associated with a longer hospital stay and number of days spent in the ICU. The difference between the development of AKI in the endovascular versus the bypass group did not reach statistical significance, however, it may have if our study had more power. Studies trying to identify individuals who may be at increased risk for AKI and to determine whether the development of AKI is associated with increased adverse long-term cardiac and limb events will be important.

NEUROVASCULAR INTERVENTION

CRT-301

Gait Speed and Quality of Life After Vein's Endovascular Procedures in Patients with Multiple Sclerosis (MS)

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BACKGROUND Chronic cerebrospinal venous insufficiency is a syndrome characterized by stenoses or obstructions of the internal jugular and/or azygous veins. Venous narrowings are related to intraluminal defects such as webs, fixed valve leaflet, membrane, inverted valve position or congenital segmental hypoplasia. The relationship between global hypoperfusion of the brain, deficient blood drainage and cerebrospinal fluid flow is discussed. The purpose of the study was to evaluate the effect of angioplasty on the clinical disability and quality of life (QoL) in MS patients 2 years after the procedure.

MATERIALS AND METHODS In our study trial (64 patients) - relapsing-remitting and patients with progressive course of disease were included. Fatigue was assessed by the Fatigue Severity Scale (FSS) and modified Fatigue Impact Scale (MFIS). QoL was evaluated by a simple Visual Analogue Scale (VAS) and Multiple Sclerosis Impact Scale 29 (MSIS-29). Gait speed was assessed by Timed 25-Foot Walk test (T25FW). The bladder dysfunction was graded by Overactive Bladder Self-Administered Questionnaire.

RESULTS In the study, an important improvement was achieved in the clinical disability of relapsing-remitting patients after 2 years of angioplasty (mean EDSS 2.96

± 1.73 vs 1.92 ± 1.82). Using T25FW gait speed significantly ($p < 0.001$) increased in 70% of MS patients. An amelioration of gait speed in RR group was achieved in 20% and 27% in patients with advanced course of disease, respectively. There is a significant decrease in FSS and MFIS score in both patient groups indicating the improvement of fatigue ($p < 0.001$). Fatigue was more frequent in patients with advanced course of disease (40%). An important amelioration of QoL using VAS and MSIS-29 scale was observed in RR and progressive patients group ($p < 0.001$). In addition, an improvement of bladder function in both groups of patients was obtained ($p < 0.001$).

CONCLUSION The deficient immunomodulatory treatment of MS is a challenging factor to search for an additional way to prevent and slow the course and the disability of this very debilitating disease. Improving the cerebral venous drainage is a promising step in the amelioration of the central nervous system function.

OTHER

CRT-302

Are Guidelines Effective In Increasing Awareness And Detection Of Peripheral Arterial Disease (PAD)?

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BACKGROUND Peripheral arterial disease (PAD) represents atherosclerotic disease in the large-vessel arterial beds excluding the coronary and cerebral circulation. PAD is asymptomatic in 50% of patients which often delays diagnosis. Early recognition can minimize complications such as limb loss and prevent cardiovascular complications, a major cause of morbidity and mortality in these patients. AHA/ACC guidelines released in 2005 and 2011 have focused on augmenting PAD surveillance. The goal of this study is to evaluate the response to guidelines by measuring new diagnoses of PAD from 2006-2013 at an urban, university medical center.

METHODS Medical records of patients newly diagnosed with peripheral arterial disease from 2006-2013 were evaluated under the premise of institutional IRB. There were no exclusion criteria. Patient age, gender, and ethnicity were obtained. An anonymous database which maintained patient confidentiality was created with new diagnoses of PAD grouped by their respective months and years.

RESULTS Medical records of 758,927 patients were surveyed for the diagnosis of PAD. The total patients seen increased annually, from 74,666 patients in 2006 to 126,683 patients in 2013. Average age of the patient population increased (47.234 years-49.374 years) over the eight year period. 5,242 patients (2628 males, 2614 females) were diagnosed with PAD. The incidence of PAD increased from 2006-2009 (0.00715-0.00860) and decreased from 2009-2013 (0.00860-0.00429). The average age at diagnosis did not follow a linear trend but increased from 65.227 years to 69.864 years from 2009-2013.

CONCLUSION Individuals with peripheral arterial disease (PAD) have higher morbidity and mortality due to cardiovascular causes. This study is of interest because despite a growing, aging patient population and a recommended earlier age of surveillance, the findings show an overall decline in incidence of PAD and an increasing age at diagnosis from 2006-2013. Suspected lack of guideline awareness, dearth of primary care literature about PAD, and insufficient diagnostic experience among primary care physicians may explain these findings. Further research about guideline efficacy and physician awareness of PAD should be performed.

PERIPHERAL VASCULAR INTERVENTION

CRT-303

Clinical Outcomes of the BIOFLEX-I Study: Utilization of Self Expanding Stents in the Iliac Arteries

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BACKGROUND Percutaneous transluminal angioplasty has historically been the standard in minimally invasive treatment of peripheral artery disease (PAD). In iliac arteries, self-expanding, nitinol stent technology has evolved as an effective treatment of atherosclerotic lesions. BIOFLEX-I evaluates the safety and efficacy of the Astron stent in the iliac arteries.

METHODS The BIOFLEX-I study was a prospective, multicenter, non-randomized, single arm, investigational device exemption (IDE) study performed in the United States, Canada, and Europe. Thirty (30) study centers enrolled 161 evaluable study subjects for treatment of *de novo* or restenotic lesions (≤ 140 mm length) or occlusions (≤ 100 mm length) in common and/or external iliac arteries with reference vessel diameters from 6 to 9mm. The primary endpoint was the composite rate of procedure or stent related major adverse events (MAEs) at 12 months post index procedure. MAEs were defined as 30-day mortality, clinically-indicated target lesion revascularization (TLR) and index limb amputation at 12 months. Results were compared to a pre-specified performance goal based on prior prospective, multicenter studies utilizing