INFRAINGUINAL ENDOVASCULAR THERAPY AS THE PRIMARY APPROACH IN PATIENTS WITH CRITICAL LIMB ISCHEMIA COMPARED WITH SURGICAL APPROACH

Thesis

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ABSTRACT

Critical limb ischemia (CLI) is characterized by multi-level disease, high burden of comorbidity and limited life span. The care of patients with CLI is not straightforward because many of them have significant co-morbidities including renal disease, advanced age, Hypertension, diabetis mellitus and Hyperlipidemia. Percutaneous balloon angioplasty improves outcomes in CLI and has increasingly become the first-line treatment for diabetic patients with CLI .Compared to surgical bypass grafting, the endovascular treatment have the advantages of being minimally invasive , associated with less morbidity and mortality, lower cost, shorter hospital stay, can be repeated and preserve the saphenous vein

Aim of the study: This study was undertaken in an effort to evaluate the efficacy of angioplasty as a primary choice for the management of infrainguinal arterial diseases compared with surgical approach in aretrospective manner.

Patients and methods: This is a prospective study conducted on patients with chronic atherosclerotic critical lower limb ischemia presenting to us along the period of 3/2015 to 11/2016. Patients presenting with non-salvagable limbs requiring primary major amputation, acute thrombosis, embolic occlusions, aneurysms ,trauma, autoimmune, artritis or connective tissue disorders (e.g. Behcet, SLE), entrapment syndromes, were excluded from this study. Patients were investigated routinely by duplex and selectively by CTA. All endovascular procedures were done in our angiosuite under local

anaesthesia and all open surgery were done in the operating theater under epidural or general anaesthesia

Result : This a study of 100 cases of CLI the mean age was 61 male/female ratio 2:1. Patients with Rutherford IV, V, and VI were 24, 17 and 33 respectively. Level of occlusions included, SFA, popliteal and crural in 47,19,34 respectively. Multilevel diseases were encountered in 85 patients. 50 patients were treated by endovascular and 50 patients needed surgery. Tackling of lesions by subintimal and intraluminal were in 3 and 97 respectively. Technical success was in endovascular and open is 93%, 85% respectively. On 12 mon6ths follow up 1ry patency, 2ry patency, limb salvage in 77.8%, 84.7% and 90.7% respectively. The overall mortality was 3%. Multiple lesions, length of lesions > 10 cm, subintimal passage lowered the technical success, patency rate, limb salvage.

Conclusion: Endovascular treatment is the 1st choice of revascularization in CLI with high technical success rate and lower mortality. Outcome being worse in case of renal , cardiac patients , Rutherford VI , multiple lesions, length of lesions > 10 cm, subintimal passage

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List of Abbreviations

CLI :Critical limb ischemia

PAD : Peripheral arterial disease

ABI : Ankle – brachial index

TASC : Trans – Atlantic Inter society consensus

MI : Myocardial - infraction

CDI : Color duplex Imaging

DPA : Dorsalispedis artery

PTA : posterior tibial artery

CTA : computed tomographic angiography

MRA : Magnetic resonance angiography

CT : Computed tomography

CO2 : Carbon dioxide

BASIL : By pass versus angioplasty in severe ischemia of the leg

ET : Endovascular treatment

SAFARI : Subintimal arterial flossing with artegrade retrograde intervention

SFA : Superficial femoral artery

RCTS : Randomized controlled trials

FDA : Food and drug administration

SIA : Subintimal angioplasty

CFA :Common femoral artery

RSFAE : Remote superficial femoral artery endarterectomy

CTOs : Chronic total occlusions

CDT : Catheter directed thrombolysis

EPD : embolic protection devices

PTFE : Polytetrafluro – Ethylene

BTK : Below the knee

SA : Subintimal angioplasty

CLL : Critical lower limb

AMS : Absorbable magnesium stents

DES : Drug eluting stents

BMS : Bare metal stents

SES : Sirolimus eluting stents

PVD : Peripheral vascular disease

NO : Nitrous oxide

EV : Endovascular treatment

CIN :Contrast induced nephropathy

CN : Contrast nephropathy

LOCM : Low osmolarity contrast media

HOCM : High osmolarity contrast media

IOCM :Intermediate osmolarity contrast media

ASA : American society of anastheologists

SBG : Surgical bypass grafting

MRSA : Methicillin –resistance staphylococcus aureus

PAOD : Peripheral Arterial occlusive disease

DFA : Deep Femoral artery

HBD : Heparin bonded -Dacron

HUV : Human umbilical vein

GSV : Great saphenous vein

CDI : Color duplex imaging

DSA :Digital subtraction angiography.

CBC : Complete blood count

LEGS : Lower extremity grading score .

Introduction

Critical limb ischemia (CLI), defined as more than two weeks of rest pain, ulcers, or tissue loss attributed to arterial occlusive disease, and is associated with great loss of both limb and life ***(Slovu, 2008).***

Critical limb ischaemia (CLI) is a disease process with tremendous cardiovascular burden. The care of patients with CLI is not straightforward because many of them have significant co-morbidities including renal disease and advanced age that further contribute to the overall morbidity, mortality, dependency and poor life satisfaction. The decision to perform a revascularisation procedure (whether by surgical bypass or endovascular treatment) versus amputation or treat with medical therapy alone remains a challenge. ***(Cieri et al, 2010)***

The primary risk factors for CLI include diabetes, hypertension, hyperlipidemia and tobacco use. Patients with diabetes are five times more likely to develop critical limb ischaemia than non-diabetics and up to 30% of patients with critical limb ischaemia are diabetic. ***(Pedrini, 2003)***

The prognosis of occlusive arterial disease is considerably worse in diabetics than in non-diabetics. The proportion of patients suitable for intervention is lower, failure after revascularisation is often caused by sepsis, and perioperative mortality is increased. This poor outcome is explained by the distal location of the arterial lesions, and the frequent association with diabetic microangiopathy, nephropathy and cardiomyopathy.***(Cardon J M et al, 2008)***