Endovascular Balloon Angioplasty in Management of Infragenicular Critical Lower Limb Ischemia

Thesis

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بسم الله الرحمن الرحيم

صدق الله العظيم

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List of Abbreviations

ACCF	*American College of Cardiology Foundation*
AHA	*American Heart Association*
AMS	*Application of Absorbable Metal Stents*
BASIL	*Bypass versus Angioplasty in Severe Ischemia of the Leg*
BMS	*Bare Metal Stents*
CAD	*Coronary Artery Disease*
CFA	*Common Femoral artery*
CLI	*Critical Limb Ischemia*
CSS	*Churg-Strauss syndrome*
CTA	*CT Angiography*
DEB	*Drug eluting balloons*
DES	*Rug Eluting Stents*
DSA	*Digital Subtraction Angiography*
GCA	*Giant cell arteritis*
HS	*High significance*
IC	*Intermittent Claudication*
IPC	*Intermittent Pneumatic Compression*
KD	*Kawsaki Disease*
LS	*Low significance*
MRA	*Magnetic Resonance Angiography*
NS	*Non Significant*
PAD	*Peripheral Arterial Disease*
PAN	*Polyarteritis Nodosa*
PTA	*Percutaneous Trans-luminal angioplasty*
PTA	*Percutaneous Transluminal Angioplasty*
RCT	*Randomized Controlled Trial*
RP	*Raynaud's Phenomenon*
SD	*Standard Deviation*
SFA	*Superficial Femoral Artery*
TA	*Takayasu Arteritis*

TAO	*Thrombangitis Obliterans*
TASC	*Trans Atlantic Inter-Society Consensus*
TBI	*Toe/Brachial Pressure Index*
TIA	*Transient Ischemic Attacks*
V.A.C	*Vacuum assisted wound closure*
WG	*Wegener granulomatosis*

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Introduction

Critical limb ischemia is associated with high rates of limb loss and mortality. Within 6 months of presentation with CLI, ≥25% of patients will require major amputation. An estimated 250,000 major amputations are performed annually in the United States and Europe, resulting in a significant socioeconomic burden and severe reduction in quality of life indicators. Published rates of mortality for CLI approach 25% at 1 year and >50% at 5 years, exceeding rates observed in any other form of occlusive arterial disease ***(Gagan et al., 2013).***

Interventional therapy for tibial arteries is a key part of the vascular specialist armamentarium. Tibial artery interventional therapy has been proven to lead to limb salvage with low morbidity and mortality in patients with critical limb ischemia and should be used as a first line treatment mode in the majority of patients, especially in those with significant medical co morbidities ***(Sean, 2009).***

Among revascularization methods for critical lower limb ischemia (CLI), surgical bypass has been regarded as the gold standard, with better anatomical and clinical durability. However, patients with CLI are often aged and not optimal candidates for surgical bypass due to medical co-morbidities with increasing perioperative mortality rates and a poor autogeneous conduit. As an alternative method of re-vascularization, infrapopliteal angioplasty is preferred by patients with visible stumps, good runoff of distal outflow vessels or high surgical risk. However, it had been regarded as an inferior treatment option compared to surgical bypass due to bulky catheters, lack of low caliber wires and general lack of