



Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/12078

DOI URL: <http://dx.doi.org/10.21474/IJAR01/12078>



RESEARCH ARTICLE

POOR PROGNOSTIC DETERMINANTS FOR PATIENTS UNDERGOING SUPERFICIAL FEMORAL ARTERY ANGIOPLASTY

S. Maruthu Thurai¹, P. Mohan Raja² and M. Murali²

1. Associate Professor, Department of Vascular Surgery, Thanjavur Medical College, Thanjavur.
2. Assistant Professor, Department of Vascular Surgery, Thanjavur Medical College, Thanjavur.

Manuscript Info

Manuscript History

Received: 20 September 2020

Final Accepted: 24 October 2020

Published: November 2020

Key words:-

Limb Ischemia, Superficial Femoral Artery Angioplasty, Endovascular Interventions

Abstract

Introduction: Aim is to study the poor prognostic determinants for patients undergoing superficial femoral artery angioplasty.

Material and Methods: It is a Prospective observational study done in fifty patients who has undergone superficial femoral artery angioplasty for lower limb ischemia.

Results: 22% had reocclusion of lesion, 10% required reintervention and 8% underwent major limb amputation. These three were considered major negative impact conditions. These were found in majority of patients with renal insufficiency, critical limb ischemia, smoker and drug defaulters.

Conclusion: Thus poor prognostic determinants in the study were renal insufficiency, critical limb ischemia, smoker and drug defaulters.

Copy Right, IJAR, 2020,. All rights reserved.

Introduction:-

Treatment of femoral artery occlusive disease (FOD) has undergone substantial changes in the last few years. Previously, most treatment guidelines recommended endovascular intervention for single, short, and focal lesions, and open surgery for extensive FOD. However, with recent improvements in technology and endovascular techniques, guidelines are now advocating endovascular treatment instead of open surgery as the primary treatment for focal or extensive disease (1, 2). Use of stents in superficial femoral artery has also achieved long-term limb salvage and patency rates similar to those of open surgery, but with much lower morbidity and mortality rates (3-5). With advancement in endovascular procedures and its high success rate in superficial femoral artery lesions have made superficial femoral artery angioplasty as treatment of choice in most patients with superficial femoral artery disease. But there are factors which reduce / severely affect outcome of superficial femoral artery intervention results which should be thoroughly analyzed for every individual patients before proceeding. Such factors are analyzed and discussed in this study so as to avoid or manage these conditions for successful outcome (6).

Methodology:-

Study Design :

Prospective Study; Study Centre : thanjavur Medical College and Hospital; Study Duration : four Years (2016-2020)

Corresponding Author:- P. Mohan Raja

Address:- Assistant Professor, Department of Vascular Surgery, Thanjavur Medical College, Thanjavur.

Study Procedure:

Fifty patients who have undergone superficial femoral artery angioplasty for lower limb ischemia in the vascular surgery department of thanjavur Medical College and Hospital were enrolled for study. Proper history, thorough clinical examination and investigations in form CT angiogram were done to all patients.

Inclusion:

All patients were subjected to Endovascular intervention by means of superficial femoral artery angioplasty were included in the study. Only patients with TASC (Trans Atlantic Society Concensus) A and B lesions were included. Exclusion: redo superficial femoral artery interventions, stented lesions, unable to cross lesions and those underwent hybrid procedures were excluded.

Follow-up:

All the patients were followed-up via outpatient visits at the following times after discharge: 15 days, 1 month, 3 months, 6 months, 12 months, and every 6 months thereafter. The following information was recorded at each visit: pulse palpation, ankle-brachial index (ABI), and symptoms.

Analyzed conditions:

Reocclusion of lesion, reintervention and major limb amputation following superficial femoral artery angioplasty were thoroughly analyzed. Factors taken were Age, gender, Hypertension, Diabetes mellitus, Heart disease, Chronic kidney disease, Tobacco use, drug defaulters, alcoholism and limb ischemia severity (claudicants / critical limb ischemia) shown in table 1.

Table 1:- Factors Taken For Analysis

S.NO.	FACTORS	NUMBER/ %
1	Age, years	<50=7(14%)
		50-60=19(38%)
		>60=24 (48%)
2	male	50(100%)
3	Hypertension	20 (40%)
4	Diabetes mellitus	47 (94%)
5	Heart disease	11 (22%)
6	Chronic kidney failure	10 (20%)
7	Tobacco use	46 (92%)
8	Alcoholic	33 (66%)
9	Critical limb ischemia	36 (72%)

Results And Discussion:-

All patients were male in this study. Reocclusion of lesion, reintervention and major limb amputation will be discussed in detail below.

Reocclusion of lesion:

22 out of 50 (44%) patients who underwent superficial femoral artery angioplasty had reocclusion of their lesions during the follow-up. These occurred in majority of patients with critical limb ischemia and smokers as shown in table 2 below. All patients with Chronic Kidney Disease developed reocclusion in a month of intervention.

Table 2:- Reocclusion Of Lesion And Their Determining Factors.

S.NO.	FACTORS	NUMBER	PERCENTAGE
1	Critical limb ischemia	5/8	63%
2	Chronic Kidney Disease	10/10	100%
3	Tobacco use	7/8	88%

Reintervention:

10%(5 out of 50) required reintervention for maintaining patency of superficial femoral artery lesion. There were 4 drug defaulters (antiplatelets/ statins) in our study, out of which 75% (3/4) required reintervention. These were shown in table 3 below.

Table 3:- Reintervention And Their Determining Factors.

S.NO.	FACTORS	NUMBER	PERCENTAGE
1	Critical limb ischemia	6/28	21%
2	Smoker	5/37	14%
3	Diabetic	3/36	8.3%
4	Drug defaulter	3/4	75%

Major amputation:

Major amputation was defined as amputation proximal to the ankle. 8%(4 out of 50) underwent major lower limb amputations. Drug defaulters and chronic kidney disease patients had higher amputation rates (75% each). These data were shown in table 4 below.

Table 4:- Major Amputation And Their Determining Factors.

S.NO.	FACTORS	NUMBER	PERCENTAGE
1	Smoker	3/37	8%
2	Diabetic	3/36	8.3%
3	Drug defaulter	3/4	75%
4	CKD	6/8	75%

There was one mortality during this follow-up period , patient died of myocardial infarction at 3 months.

Kudo et al. analyzed the long-term outcomes and predictors of outcome after superficial femoral artery angioplasty in 151 patients. In that study, chronic kidney failure with hemodialysis and ulcer/gangrene as an indication for percutaneous transluminal angioplasty were associated with adverse outcomes (7-9). In our study similarly chronic kidney disease had adverse outcome.

Galaria and associates reported 10-year patencies for patients with TASC A and B lesions , they found that hypertension, hypercholesterolemia, and chronic renal insufficiency were associated with increased risk of primary failure(10). In our study, chronic kidney disease had increased risk for reocclusion and poor patency rates.

Conclusion:-

Thus of various factors studied, it is found that major poor prognostic determinants in the study were renal insufficiency, critical limb ischemia, smokers and drug defaulters. Although superficial femoral artery endovascular interventions have good outcome in general, to these above subset of patients outcomes are poor. Hence while these subsets of patients undergoes endovascular interventions further caution and extra care are required for better outcome.

Reference:-

1. Haimovici's Vascular Surgery, 6edition
2. Hallet's Comprehensive.Vascular.and.Endovascular.Surgery, 2nd edition.
3. Rutherford's vascular surgery, volume-1-2, 9th edition.
4. Wesley S.Moore's Vascular and Endovascular surgery, 8th edition
5. S. Sixt, A.K. Alawied, A. Rastan, U.S. Schwarzwaldler, M. Kleim, E. Noory, *et al.* Acute and long-term outcome of endovascular therapy for aortoiliac occlusive lesions stratified according to the TASC classification: a single-center experience J Endovasc Ther, 15 (2008), pp. 408-416
6. Norgren L, Hiatt W, Dormandy J, et al. Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II) Eur J Vasc Endovasc Surg. 2007;33(Suppl 1):S5-75.
7. Kudo T, Chandra FA, Ahn SS. Long-term outcomes and predictors of superficial femoral artery angioplasty;. J Vasc Surg. 2005;42(3):466-475
8. de Vries SO, Hunink MG. Results of aortic bifurcation grafts for peripheral artery occlusive disease: a meta-analysis. J Vasc Surg.1997;26:558-569.
9. Jongkind V, Akkersdijk GJ, Yeung KK, Wisselink W. A systematic review of endovascular treatment of extensive peripheral artery occlusive disease J Vasc Surg. 2010;52(5):1376-1383.

10. Galaria II, Davies MG. Percutaneous transluminal revascularization for peripheral artery occlusive disease: long-term outcomes in transatlantic inter-society consensus a and b lesions. *Ann Vasc Surg.* 2005;19:352–360.