



## POOR PROGNOSTIC DETERMINANTS FOR PATIENTS UNDERGOING ILIAC ARTERY ANGIOPLASTY AND STENTING

### General Surgery

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### ABSTRACT

**Introduction:** Aim is to study the poor prognostic determinants for patients undergoing iliac artery angioplasty and stenting. Material and Methods: It is a Prospective observational study done in forty patients who has undergone iliac artery angioplasty and stenting for lower limb ischemia.

**Results:** 15% had reocclusion of lesion, 7.5% required reintervention and 7.5% 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.

### KEYWORDS

limb ischemia, iliac artery angioplasty, endovascular interventions

#### INTRODUCTION:

Treatment of iliac occlusive disease (IOD) 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 IOD. 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 iliac angioplasty 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 iliac artery lesions have made iliac artery angioplasty and stenting as treatment of choice in most patients with iliac artery disease. But there are factors which reduce / severely affect outcome of iliac 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 : Stanley Medical College and Hospital; Study Duration : Three Years (2015-2017)
- Study Procedure:** Forty patients who have undergone iliac artery angioplasty and stenting for lower limb ischemia in the vascular surgery department of Stanley 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 iliac artery angioplasty/ stenting were included in the study. Only patients with TASC (Trans Atlantic Society Consensus) A and B lesions were included. Exclusion: redo iliac interventions, unable to cross iliac 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 iliac angioplasty/stenting 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=5(12.5%)
		50-60=16 (40%)
		>60=19 (47.5%)
2	male	40 (100%)
3	Hypertension	15 (37.5%)
4	Diabetes mellitus	36 (90%)
5	Heart disease	3 (7.5%)
6	Chronic kidney failure	4 (10%)
7	Tobacco use	35 (87.5%)
8	Alcoholic	23(80%)
9	Critical limb ischemia	26 (65%)

#### 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: 6 out of 40 (15%) patients who underwent iliac angioplasty/stenting 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: REOCCCLUSION OF LESION AND THEIR DETERMINING FACTORS**

S.NO.	FACTORS	NUMBER	PERCENTAGE
1	Critical limb ischemia	4/6	66%
2	Chronic Kidney Disease	4/4	100%
3	Smoker	5/6	83%

#### Reintervention:

7.5% (3 out of 40) required reintervention for maintaining patency of iliac 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	3/23	13%

2	Smoker	1/37	2.7%
3	Diabetic	3/36	8.3%
4	Drug defaulter	3/4	75%

**MAJOR AMPUTATION:**

Major amputation was defined as amputation proximal to the ankle. 7.5% (3 out of 40) 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	3/4	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 iliac 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 iliac 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.

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