ORIGINAL RESEARCH PAPER

Volume-8 | Issue-3 | March-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

FACTORS INFLUENCING OUTCOMES IN INFRAINGUINAL REDO PROCEDURES.

Surgery

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ABSTRACT

Introduction: Aim is to study the negative and positive prognostic determinants for patients undergoing redo procedures for inguinal bypasses.
Material and Methods: It is a Prospective observational study done in 18 patients who underwent redo procedures for infrainguinal bypasses.
Results: 66.7% had post procedure patency, 33.3% required amputations. Poor prognostic factors were found to be renal insufficiency, poorly controlled diabetes mellitus, smoking and delayed presentation and negatively impacted outcomes.
Conclusion: Thus poor prognostic determinants in the study were renal insufficiency, smoking Diabetes mellitus and time at presentation.

KEYWORDS

limb ischemia, redo procedures, poor prognostic factors

INTRODUCTION:

Leg bypass for atherosclerotic femoral, popliteal, and tibial arterial lesions is being performed in increasing numbers in our aging population. Although prolonged patency and excellent limb salvage rates have become standard, 1, 2 vascular surgeons are inevitably encountering increasing numbers of patients with recurrent limb ischemia or recurrent graft stenosis after failed bypasses in the same leg. The outcome of a second leg bypass in patients with leg ischemia after failure of the first bypass has been the focus of numerous prior reports that have described marginally satisfactory limb salvage rates of 30% to 52% at 3 to 5 years in patients undergoing repeat operation. 3, 4, 5, 6, 7, 8, 9, 10 Further bypass grafting attempts after graft failures may be logically expected to have an even worse outcome than that after a single failure. Although multiple authors advocate an aggressive approach to limb salvage after graft failure, the specific role of repeat bypass after bypass failures has not been addressed. 12, 13
An unanswered question is whether primary amputation should be performed in these patients because of the anticipated increased likelihood of failure of the third or fourth bypass or graft repair in the same leg. Unfortunately, amputation is too often followed by nonambulatory status, neglect, progressive decline, and death. 14, 15, Based on generally favorable prior experience with regrafting after a single failed leg bypass, 11 we have maintained a surgical policy of repeat infrainguinal revascularization. The purpose of this study is to review our clinical experience in patients with graft failure and study the positive and negative prognostic factors.

METHODOLOGY:

- **Study Design :** Prospective Study; Study Centre : Stanley Medical College and Hospital; Study Duration : Four Years (2015-2018)
- **Study Procedure:** 18 patients who have undergone redo procedures, femoro popliteal or femorodistal bypasses 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 who underwent redo procedures for infrainguinal lesions
- Exclusion: those underwent hybrid procedures.
- 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 factors: Patency of grafts and major limb amputation following redo procedures were thoroughly analyzed. Factors taken were shown in table 1.

Table 1: FACTORS TAKEN FOR ANALYSIS

S.NO.	FACTORS	NUMBER/ %
1	Age, years	<50=6(33.3%)
		50-60=5 (27.7%)
		>60=7 (38.8%)
2	Male Female	14(77.7%) 4(22.2%)
3	Smoker	13(72.2%)
4	Diabetes mellitus	9 (50%)
5	Chronic kidney failure	3 (16.6%)

RESULTS AND DISCUSSION:

Patency post procedure and major limb amputation will be discussed in detail below.

Patency: 12 out of 18 (66.6%) patients had post op patency of grafts. This was lower in patients with smoking, Diabetes Mellitus and Chronic Kidney disease as shown in table 2 below.

TABLE 2: POSITIVE PROGNOSTIC FACTORS INFLUENCING PATENCY

S.NO.	FACTORS	NUMBER	PERCENTAGE
1	Age>60	7/12	58.33%
2	Female	4/4	100%
3	No smoking	4/13	30.76%

MAJOR AMPUTATION:

Major amputation was defined as amputation proximal to the ankle. 33.3% (6 out of 18) underwent major lower limb amputations. Smokers, diabetics chronic kidney disease patients had higher amputation rates. These data were shown in table 4 below.

TABLE 4: MAJOR AMPUTATION AND THEIR DETERMINING FACTORS

S.NO.	FACTORS	NUMBER	PERCENTAGE
1	Smoker	6/6	100%
2	Diabetic	3/6	50%
3	CKD	3/6	50%
4	Time at presentation>30 days	4/6	66.6%

DISCUSSION:

Vascular surgeons are encountering increasing numbers of patients

with a failed or failing leg bypass graft in our aging population. Amputation in the presence of reconstructible vessels seems to be an especially unfavorable option. Compared with bypass it has an equal or greater mortality/morbidity rate coupled with an unacceptably large percentage of amputees who never regain bipedal status.

Past reports of repeat limb bypass after a single graft failure have demonstrated poor patency rates of less than 30% at 5 years and similarly poor limb salvage rates. 9, 13 many 10, 11 have reported repeat bypass after at least one prior failure to yield a primary patency rate of 37% to 57% at 5 years. The limb salvage rate at 5 years of 59% to 90% obviously has resulted from careful follow-up and satisfactory secondary patency rates

The combination of an aging population and an epidemic of abnormalities in glucose homeostasis (insulin resistance, metabolic syndrome, and diabetes mellitus) has shifted the characteristics of patients presenting for lower extremity bypass into ones with increasingly complex comorbidities and challenging anatomy 14. In contrast to patients presenting for cardiac reconstructions, lower extremity bypass patients are generally older, and with higher proportions of women, diabetics, and those with renal insufficiency .these findings are consistent with the findings of our study. Patients with diabetes and renal impairment often present with tissue necrosis (gangrene or ulceration) and have a propensity for advanced disease in the tibial distribution, which limits the applicability and effectiveness of endovascular therapy and mandates open surgical reconstructions to the distal tibial or pedal levels 15.

CONCLUSION:

Thus of various factors studied, it is found that major poor prognostic determinants in the study were renal insufficiency, smoking and Diabetes. Patency is better after redo in females, older age individuals and the tobacco abstinent. Rates of amputation are higher in diabetics, renal impairment and smokers.

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