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The Role Of Wifi Scoring System In Predicting The Risk Of Lower Extremity Amputation In Diabetic Foot

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Abstract

Background And Objective

Diabetes mellitus presently affects 366 million people worldwide or 8.3% of the world population. This figure is expected to increase to 9.9% by 2030, owing to environmental factors such as sedentary lifestyles and changing dietary patterns.[1] Every year, more than 1 million people undergo amputation as a consequence of diabetes, which calculates to limb lost to diabetes in world every 30 seconds. [2] This study is to predict the risk of lower extremity amputation in diabetic foot using the WIfI scoring system.

Methods

Ninety-five patients who were diagnosed with Type 2 diabetes mellitus above 18years who came to OPD or got admitted in ESIC Medical college with complaints foot infection were evaluated and assessed. Patients were taken up for surgery based on clinical assessment and those patients were correlated to The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system for predicting the risk of amputation. Patient who underwent lower extremity amputation using this score were further studied for determining the factors leading to amputation.

Result

Ninety-five patients with diabetic foot infection were admitted and treated during the study period of January 2021 to January 2023.

1. The peak incidence of diabetic foot infection was seen among males(56.80%) .
2. As age, BMI and clinical stage increases, the risk of amputation increases.
3. Patients with Grade 2 and Grade 3 of wound, ischemic and infective grade are at high risk of amputation.
4. Hypertension is associated with high risk of amputation.

Conclusion

This study supports the ability of The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system to predicting the risk of amputation. As the clinical stage progresses, the risk of major amputation increases.

Keywords: NIL

Introduction

Diabetes is a major public health challenge worldwide, which is associated with a variety of complications including cardiovascular, kidney, eye and foot disease. It is an important cause of mortality, morbidity, cost (to health systems and the patient) and disability worldwide. The number of adults living with diabetes worldwide has quadrupled over the last 35 years and will continue to rise.[3] In 2013, approximately 382 million people had diabetes and

this number is expected to rise to 592 million by 2035.[4]

The four categories of diabetes are Type 1 diabetes mellitus, Type 2 diabetes mellitus, Gestational diabetes and secondary diabetes. Type 1, formerly insulin-dependent diabetes mellitus (IDDM), is an autoimmune disease affecting the pancreas. Individuals with type 1 diabetes are prone to ketosis and unable to produce endogenous insulin. Type 2, formerly non-insulin dependent diabetes mellitus (NIDDM), accounts for 90% to 95% of cases diagnosed. Type 2 diabetes is characterized by hyperglycemia in the presence of hyperinsulinemia due to peripheral insulin resistance. Gestational as well as genetic defects and endo-crinopathies are recognized as other types of diabetes.[5]

Foot disease affects nearly 6% of people with diabetes[6] and includes infection, ulceration, or destruction of tissues of the foot[7] . It can impair patient's quality of life and affect social participation and livelihood[8] . Between 0.03% and 1.5% of patients with diabetic foot require an amputation[9] . Most ulcers can be prevented with good foot care and screening for risk factors for a foot at risk of complications[10] . 2

Due to demographic shifts over the last 40 years, especially a dramatic rise in the incidence of diabetes mellitus and rapidly expanding techniques of revascularization, it has become increasingly difficult to perform meaningful outcomes analysis for patients with threatened limbs using the existing classification systems. Critical limb ischemia was used to delineate a subgroup of patients with a threatened lower extremity needing amputation primarily because of chronic ischemia. Older wound classification systems like Fontaine and Rutherford Systems have been used to classify risk of amputation and likelihood of benefit from revascularization by subcategorizing patients into two groups: ischemic rest pain and tissue loss. Perfusion is only one determinant of outcome; wound extent and the presence and severity of infection also greatly impact the threat to a limb.

Therefore, the Society for Vascular Surgery Lower Extremity Guidelines Committee undertook the task of creating a new classification of the threatened lower extremity that reflects these important considerations and termed this new framework, the Society for Vascular Surgery Lower Extremity Threatened Limb Classification System. Risk stratification is based on three major factors that impact amputation risk and clinical management: Wound, Ischemia, and foot Infection (WIfI). The implementation of this classification system is intended to permit more meaningful analysis of outcomes for various forms of therapy in this challenging, but heterogeneous population.

The SVS WIfI classification system is a first step towards re-examining the evaluation and treatment of patients with a spectrum of lower extremity ulcer. It is intended to be an interactive process with the goal of more precisely stratifying patients according to their initial disease burden.

Methods And Methodology Materials

A prospective study in which ninety-five patients were studied from January 2021 to January 2023 conducted in Department of General Surgery, ESIC-MC & PGIMSR, Rajaji Nagar, Bengaluru, Karnataka.

Method

After obtaining approval and clearance from the Institutional Ethics Committee, the prospective study was conducted in Department of General Surgery, ESIC-MC and PGIMSR, Rajajinagar, Bangalore from 2021 to 2023.

1. Ninety- five patients who were diagnosed with Type 2 diabetes mellitus above 18 years who came to the OPD or got admitted in ESIC Medical college with complaints foot infection were evaluated and assessed.
2. All the patients were examined and thoroughly investigated. The inclusion criteria for the study are patients who are above 18 years with foot infection who give consent for the study. Those who fulfilled the inclusion criteria were counseled and explained about the study, informed consent was obtained in their own understandable language.
3. A detailed history was taken from all the eligible patients. Every patient was clinically assessed and given a WIfI score.
4. Patients underwent few hematological investigations and Doppler study.
5. Patients underwent conservative management or were taken up for surgery based on clinical assessment and those patients were correlated to

Volume 7, Issue 1; January-February 2024; Page No 348-365

The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system for predicting the risk of amputation.

6. Patients were followed up for a period of one year.
7. Patient who underwent lower extremity amputation using this score were further studied for determining the factors leading to amputation.
8. Risk for amputation was assessed using the scoring system.

Assessment Tool- Wifi Scoring

WOUND GRADE	ISCHEMIC GRADE	INFECTIVE GRADE
0 - no wound	0- TP > 60 mmHg ABI > 0.8 ASP > 100 mmHg	0-no symptom or signs of infection
1- small shallow ulcer, no exposed, unless limited to distal phalanx, no angrene	1-TP 40-59 mmHg ABI 0.6-0.79 ASP 70-100 mmHg	1-Local infection involving only skin, subcutaneous tissue
2- deeper ulcer with exposed bone joint or tendon, not involving tissue heel. Shallow heel ulcer without calcaneal involvement. Gangrene limited to digits.	2-TP 30-39 mmHg ABI 0.4-0.59 ASP 50-70 mmHg	2-Local infection with erythema >2cm ,or involving structures deeper than skin , subcutaneous tissue
3- extensive, deep ulcer involving forefoot. Deep, full thickness heel ulcer and/or calcaneal involvement. Extensive gangrene involving forefoot. Full thickness heel necrosis and calcaneal involvement.	3-TP < 30 mmHg ABI < 0.39 ASP < 30 mmHg	3- Local infection with signs of SIRS

TP - toe pressure, ABI- ankle brachial index, ASP-ankle systolic pressure, SIRS-systemic inflammatory response syndrome.

	ISHCEMIA-0				ISHCEMIA-1			
W-0	VL	VL	L	M	VL	L	M	H
W-1	VL	VL	L	M	VL	L	M	H
W-2	L	L	M	H	M	M	H	H
W-3	M	M	H	H	H	H	H	H
	fI-0	fI-1	fI-2	fI-3	fI-0	fI-1	fI-2	fI-3

	ISCHEMIA-2	ISCHEMIA-3

Volume 7, Issue 1; January-February 2024; Page No 348-365

W-0	**L**	**L**	**M**	**H**	**L**	**M**	**M**	**H**
W-1	**L**	**M**	**H**	**H**	**M**	**M**	**H**	**H**
W-2	**M**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
W-3	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
	fI-0	**fI-1**	**fI-2**	**fI-3**	**fI-0**	**fI-1**	**fI-2**	**fI-3**

VL – VERY LOW = CLINICAL STAGE 1

V – LOW = CLINICAL STAGE 2

M – MODERATE = CLINICAL STAGE 3

H – HIGH = CLINICAL STAGE 4

Results

Demographic Analysis

A total of 95 patients with diabetic foot infection were admitted and treated during the study period January 2021 to January 2023.The clinical pattern of foot infection were clinically assessed, WIfI score was given to each patient, appropriate investigations were done, treatment was given and the associated complications were analyzed and the following results were obtained.

Gender Wise Risk Of Amputation

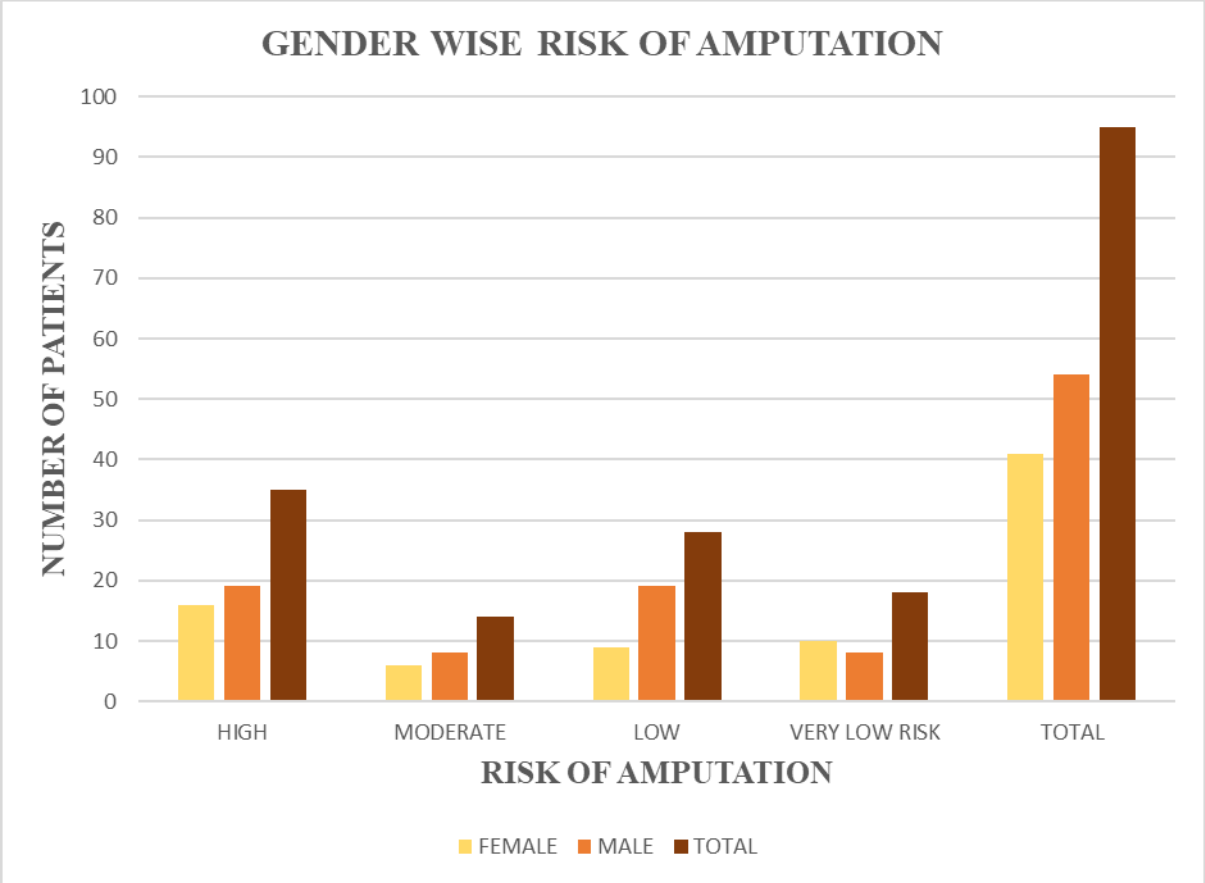
RISK OF AMPUTATION		FEMALE	MALE	TOTAL	P-VALUE
HIGH	Number	16	19	35	
	Percent	16.80%	20.00%	36.80%	
MODERATE	Number	6	8	14	
	Percent	6.30%	8.40%	14.70%	
LOW	Number	9	19	28	**0.445**
	Percent	9.50%	20.00%	29.50%	
VERY LOW	Number	10	8	18	

Volume 7, Issue 1; January-February 2024; Page No 348-365

	Percent	10.50%	8.40%	18.90%	
TOTAL	Number	41	54	95	
	Percent	43.20%	56.80%	100.00%	

Peak Incidence of diabetic foot was seen among males (56.80%). Males are at high risk for amputation compared to the females.

Gender Wise Risk Of Amputation

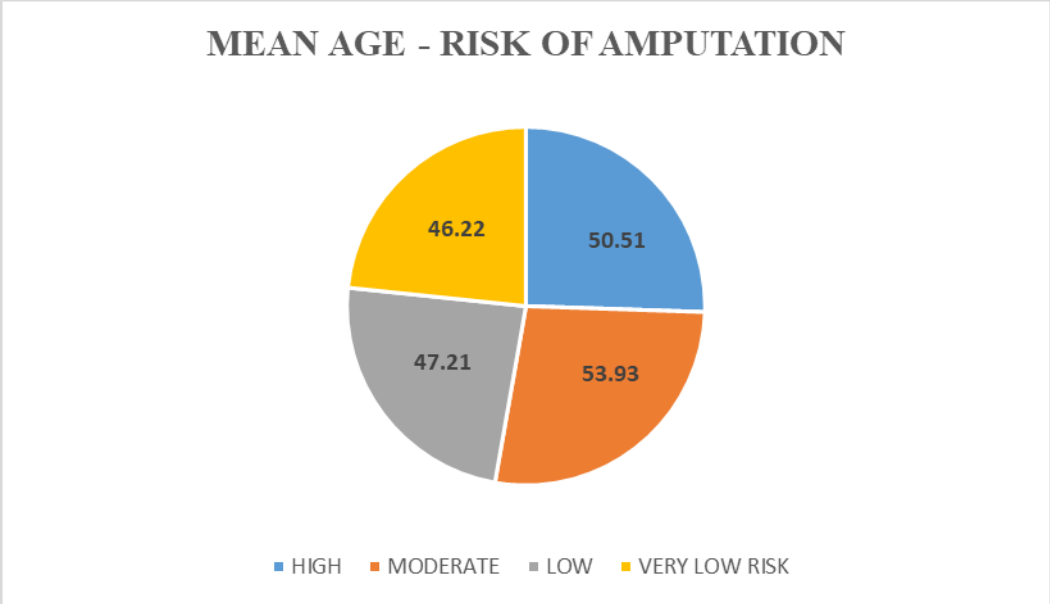


Age And Bmi Wise Risk Of Amputation

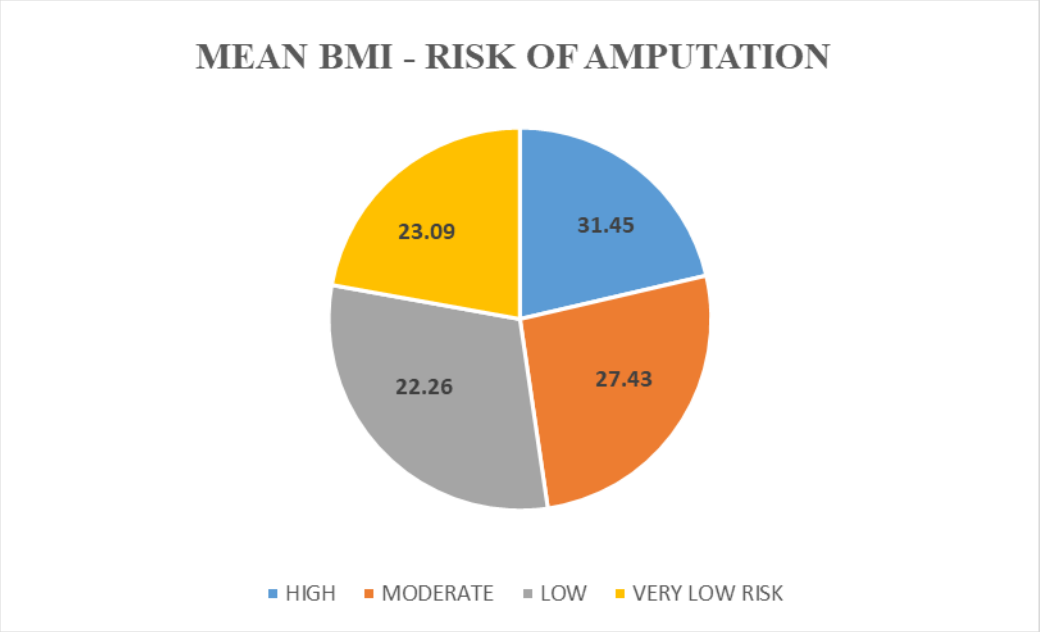
VALUES	HIGH	MODERATE	LOW	VERY LOW	OVERALL	P -VALUE
MEAN AGE	50.51	53.93	47.21	46.22	49.23	**0.12**
SD	9.33	10.31	7.41	10.12	9.34	
MEAN BMI	31.45	27.43	22.26	23.09	26.56	**0.02**

Volume 7, Issue 1; January-February 2024; Page No 348-365

SD	6.25	5.45	2.98	3.26	6.29	



AGE WISE RISK OF AMPUTATION



Bmi Wise Risk Of Amputation

The mean age which is at high risk of amputation is 50.51. Patients with mean BMI of 31.45 is at high risk for amputation. As the age and BMI increases, the risk of amputation increases.

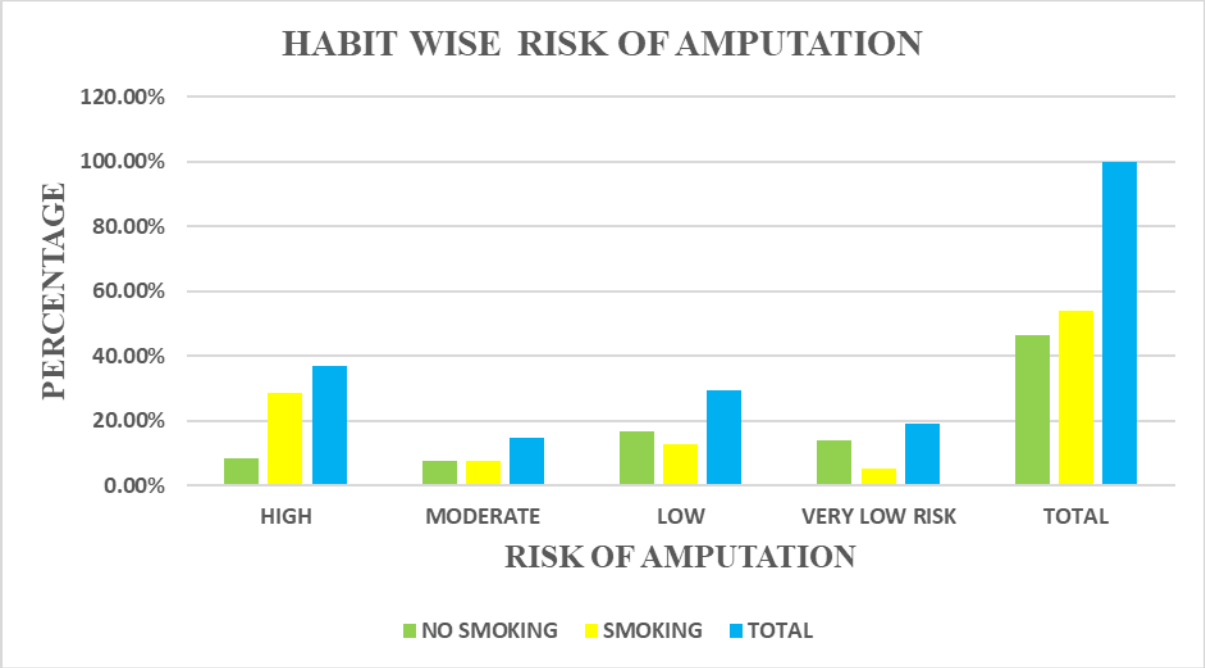
Habit Related To Risk Of Amputation

RISK OF AMPUTATION	NO SMOKING	SMOKING	TOTAL	P-value

Volume 7, Issue 1; January-February 2024; Page No 348-365

HIGH	Number	8	27	35	**0.03**
	Percent	8.40%	28.40%	36.80%	
MODERATE	Number	7	7	14	
	Percent	7.40%	7.40%	14.70%	
LOW	Number	16	12	28	
	Percent	16.80%	12.60%	29.50%	
VERY LOW	Number	13	5	18	
	Percent	13.70%	5.30%	18.90%	
TOTAL	Number	44	51	95	
	Percent	46.30%	53.70%	100.00%	

Smoking increases the risk of amputation



Habit Related To Risk Of Amputation

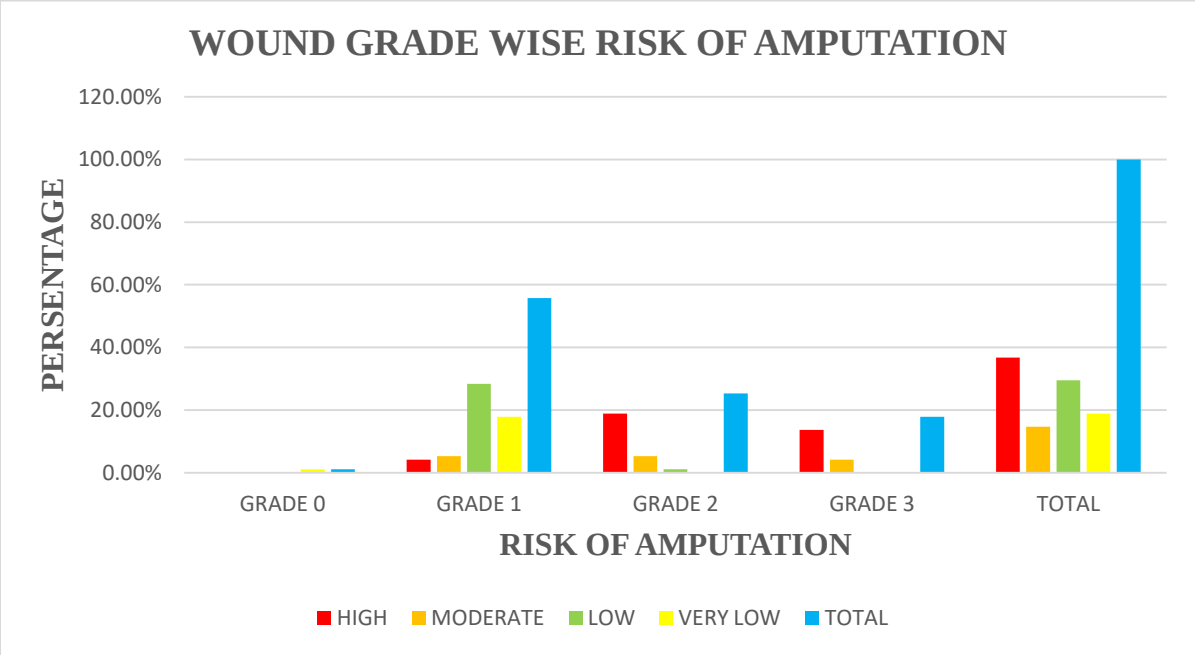
Wound Grade Related To Risk Of Amputation

RISK OF AMPUTATION		Grade 0	Grade 1	Grade 2	Grade 3	TOTAL	P-value
HIGH	Number	0	4	18	13	35	
	Percent	0.00%	4.20%	18.90%	13.70%	36.80%	
MODERATE	Number	0	5	5	4	14	
	Percent	0.00%	5.30%	5.30%	4.20%	14.70%	

Volume 7, Issue 1; January-February 2024; Page No 348-365

LOW	Number	0	27	1	0	28	**0.001**
	Percent	0.00%	28.40%	1.10%	0.00%	29.50%	
VERY LOW	Number	1	17	0	0	18	
	Percent	1.10%	17.90%	0.00%	0.00%	18.90%	
Total	Number	1	53	24	17	95	
	Percent	1.10%	55.80%	25.30%	17.90%	100.00 %	

Patients with Grade 2 and Grade 3 wound are at high risk amputation according to the WIfI Scoring system.



Wound Grade Related To Risk Of Amputation

Ischemic Grade Related To Risk Of Amputation

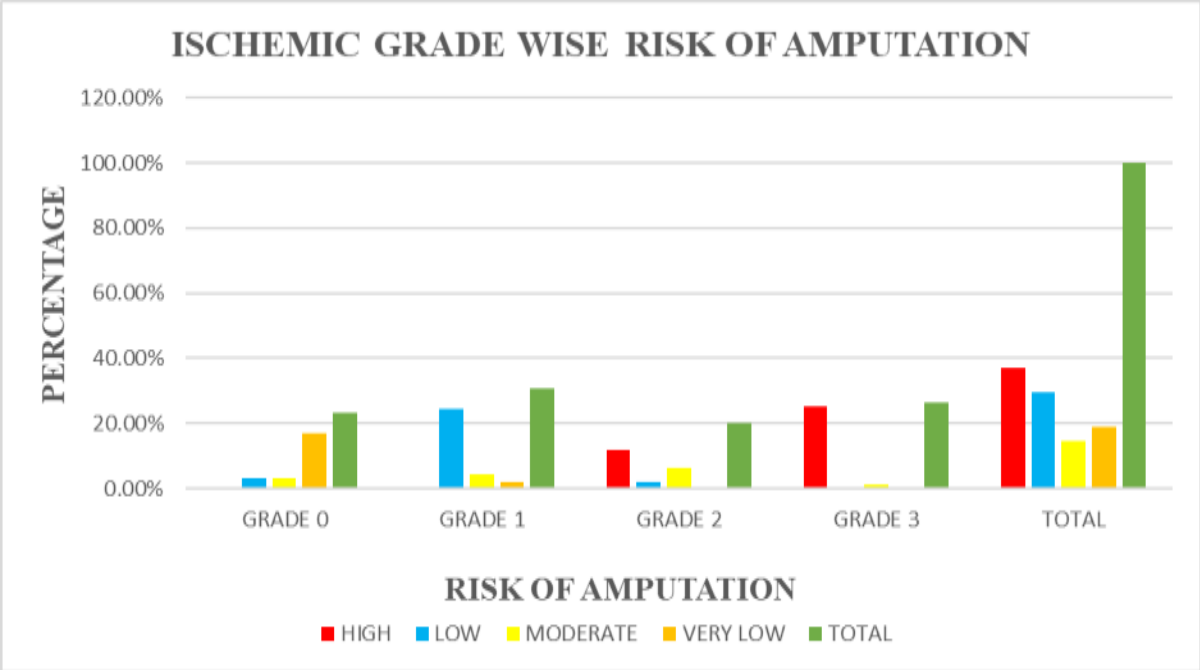
RISK OF AMPUTATION		Grade 0	Grade 1	Grade 2	Grade 3	Total	P-value
HIGH	Number	0	0	11	24	35	
	Percent	0.00%	0.00%	11.60%	25.30%	36.80 %	
MODERATE	Number	3	4	6	1	14	
	Percent	3.20%	4.20%	6.30%	1.10%	14.70 %	<0.001
LOW	Number	3	23	2	0	28	
	Percent	3.20%	24.20%	2.10%	0.00%	29.50 %	

Volume 7, Issue 1; January-February 2024; Page No 348-365

VERY LOW	Number	16	2	0	0	18	
	Percent	16.80%	2.10%	0.00%	0.00%	18.90 %	
TOTAL	Number	22	29	19	25	95	
	Percent	23.20%	30.50%	20.00%	26.30%	100.00 %	

Grade 2 and Grade 3 are associated with high risk of amputation. Very low and low risk patients have Grade 0 and Grade 1 ischemic grade.

Ischemic Grade Related To Risk Of Amputation



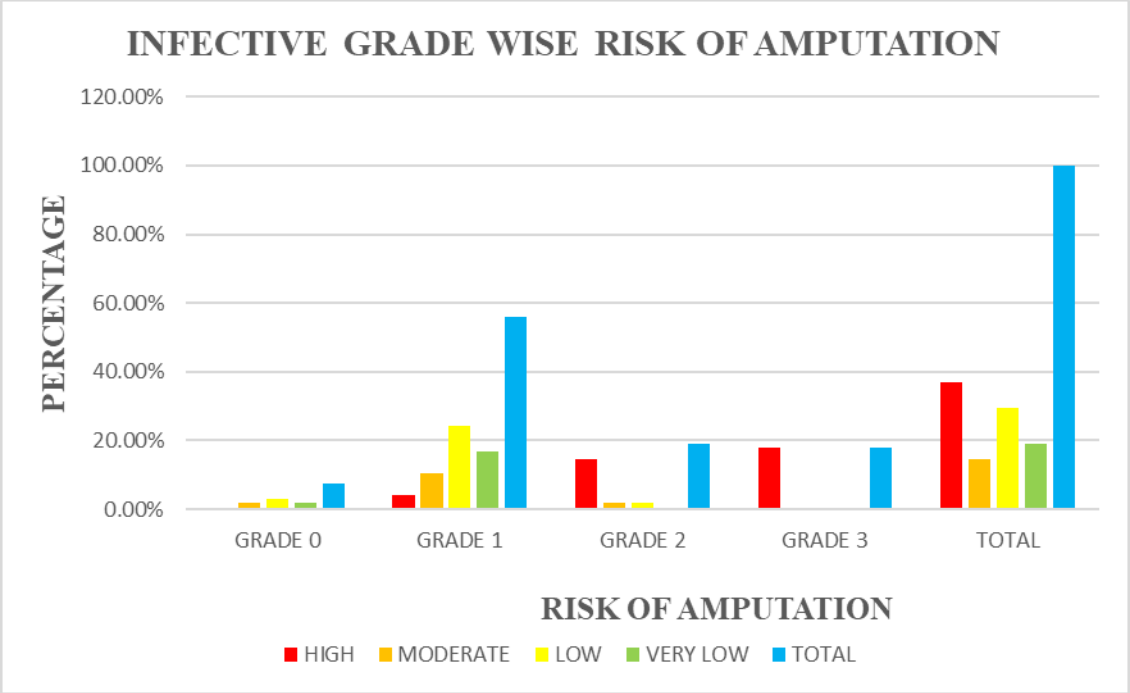
Infective Grade Related To Risk Of Amputation

RISK OF AMPUTATION		Grade 0	Grade 1	Grade 2	Grade 3	Total	P-value
HIGH	Number	0	4	14	17	35	**<0.001**
	Percent	0.00%	4.20%	14.70%	17.90%	36.80%	
MODERATE	Number	2	10	2	0	14	
	Percent	2.10%	10.50%	2.10%	0.00%	14.70%	
LOW	Number	3	23	2	0	28	
	Percent	3.20%	24.20%	2.10%	0.00%	29.50%	
VERY LOW	Number	2	16	0	0	18	
	Percent	2.10%	16.80%	0.00%	0.00%	18.90%	

Volume 7, Issue 1; January-February 2024; Page No 348-365

TOTAL	Number	7	53	18	17	95	
	Percent	7.40%	55.80%	18.90%	17.90%	100.00 %	

Grade 2 and Grade 3 infective grade is associated with high risk of amputation.

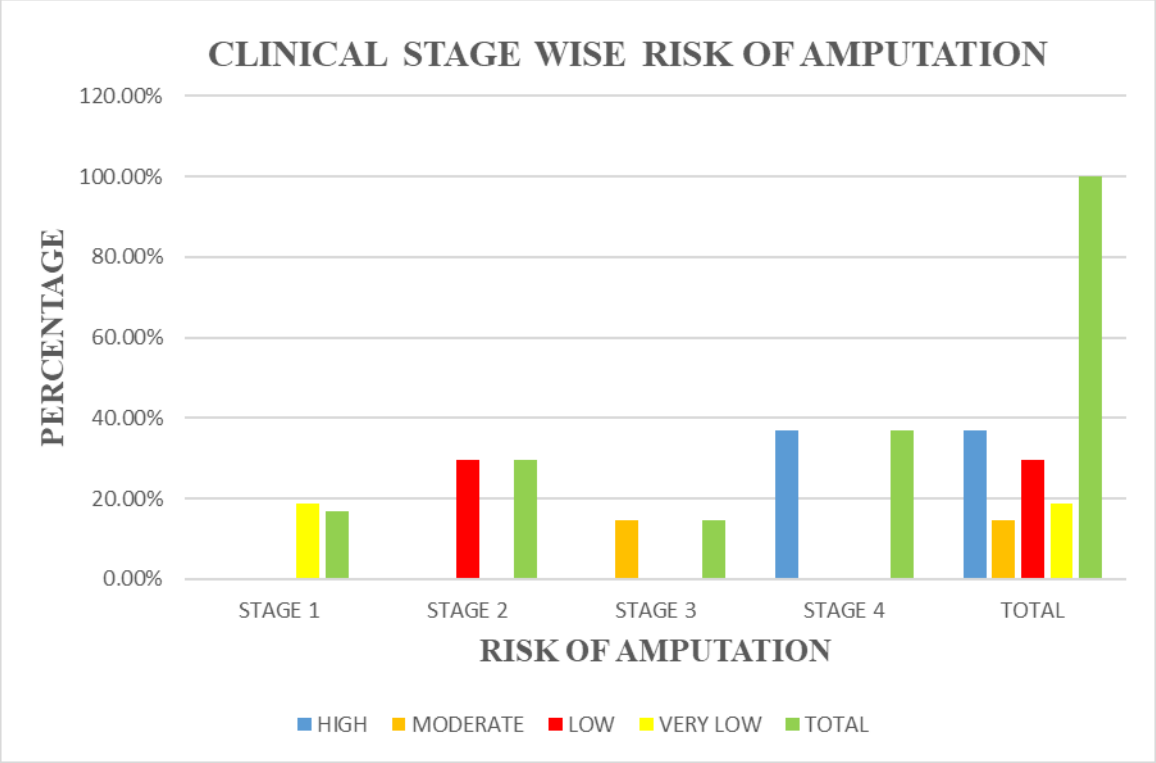


Clinical Stage Related To Risk Of Amputation

RISK OF AMPUTATION		Stage 1	Stage 2	Stage 3	Stage 4	Total	P-value
HIGH	Number	0	0	0	35	35	**<0.001**
	Percent	0.00%	0.00%	0.00%	36.80%	36.80%	
MODERATE	Number	0	0	14	0	14	
	Percent	0.00%	0.00%	14.70%	0.00%	14.70%	
LOW	Number	0	28	0	0	28	
	Percent	0.00%	29.50%	0.00%	0.00%	29.50%	
VERY LOW	Number	18	0	0	0	18	
	Percent	18.90%	0.00%	0.00%	0.00%	18.90%	
TOTAL	Number	16	28	14	35	95	
	Percent	16.80%	29.50%	14.70%	36.80%	100.00%	

As the stage increases the risk of amputation increases. Very low risk belongs to Stage 1

Volume 7, Issue 1; January-February 2024; Page No 348-365



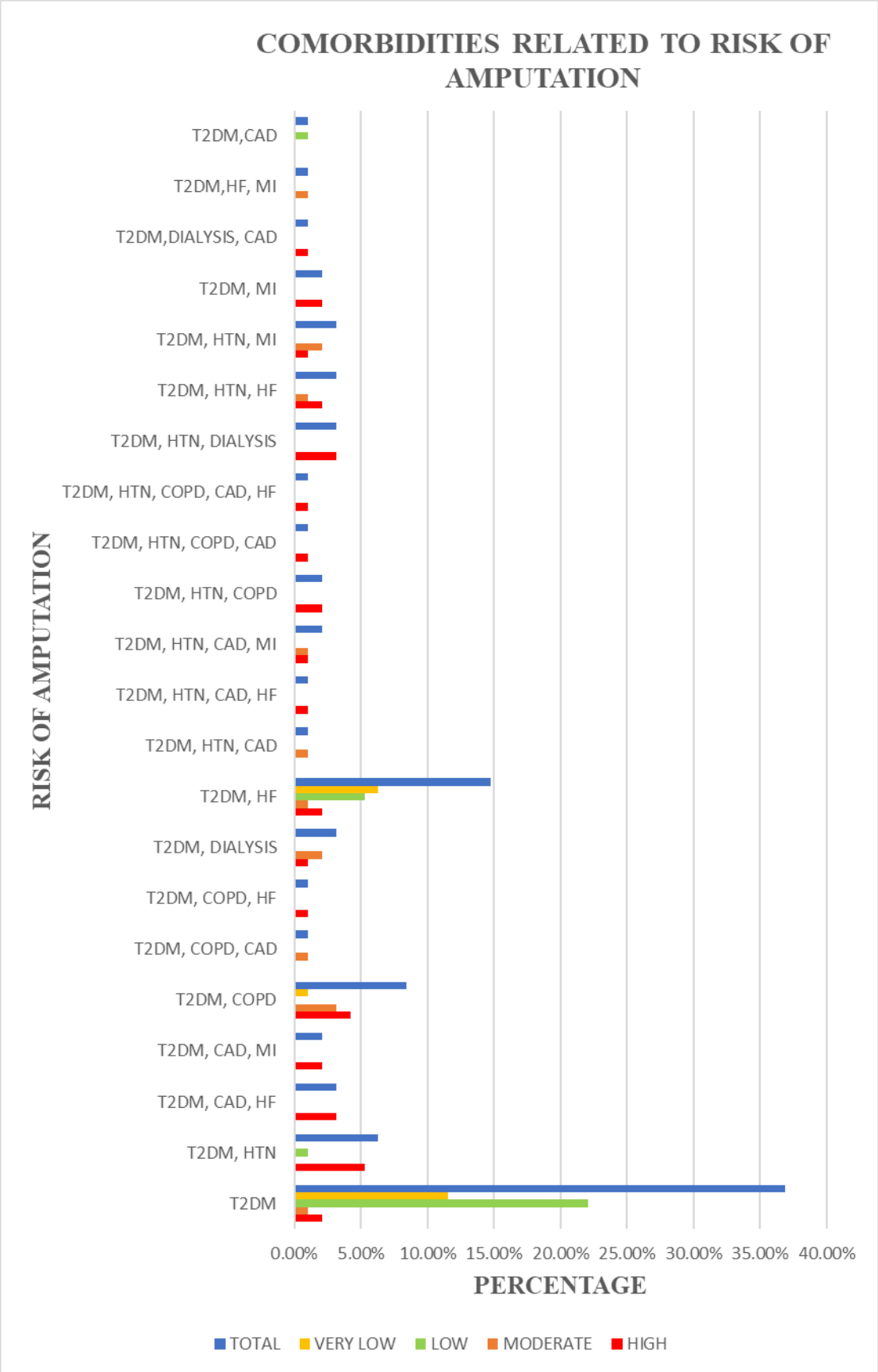
Co-Morbidities Related To Risk Of Amputation

RISK OF AMPUTATION	HIGH		MODERATE		LOW		VERY LOW		TOTAL	
Row Labels	No	%	No	%	No	%	No	%	No	%
T2DM	2	2.11%	1	1%	21	22%	11	12%	35	37%
T2DM, HTN	5	5.26%		0%	1	1%		0%	6	6%
T2DM, CAD, HF	3	3.16%		0%		0%		0%	3	3%
T2DM, CAD, MI	2	2.11%		0%		0%		0%	2	2%
T2DM, COPD	4	4.21%	3	3%		0%	1	1%	8	8%
T2DM, COPD, CAD		0.00%	1	1%		0%		0%	1	1%
T2DM, COPD, HF	1	1.05%		0%		0%		0%	1	1%
T2DM, DIALYSIS	1	1.05%	2	2%		0%		0%	3	3%
T2DM, HF	2	2.11%	1	1%	5	5%	6	6%	14	15%
T2DM, HTN, CAD		0.00%	1	1%		0%		0%	1	1%

Volume 7, Issue 1; January-February 2024; Page No 348-365

T2DM, HTN, CAD, HF	**1**	**1.05%**		**0%**		**0%**		**0%**	**1**	**1%**
T2DM, HTN, CAD, MI	**1**	**1.05%**	**1**	**1%**		**0%**		**0%**	**2**	**2%**
T2DM, HTN, COPD	**2**	**2.11%**		**0%**		**0%**		**0%**	**2**	**2%**
T2DM, HTN, COPD, CAD	**1**	**1.05%**		**0%**		**0%**		**0%**	**1**	**1%**
T2DM, HTN, COPD, CAD, HF	**1**	**1.05%**		**0%**		**0%**		**0%**	**1**	**1%**
T2DM, HTN, DIALYSIS	**3**	**3.16%**		**0%**		**0%**		**0%**	**3**	**3%**
T2DM, HTN, HF	**2**	**2.11%**	**1**	**1%**		**0%**		**0%**	**3**	**3%**
T2DM, HTN, MI	**1**	**1.05%**	**2**	**2%**		**0%**		**0%**	**3**	**3%**
T2DM, MI	**2**	**2.11%**		**0%**		**0%**		**0%**	**2**	**2%**
T2DM, DIALYSIS, CAD	**1**	**1.05%**		**0%**		**0%**		**0%**	**1**	**1%**
T2DM, HF, MI		**0.00%**	**1**	**1%**		**0%**		**0%**	**1**	**1%**
T2DM, CAD		**0.00%**		**0%**	**1**	**1%**		**0%**	**1**	**1%**
Grand Total	**35**	**36.84%**	**14**	**15%**	**28**	**29%**	**18**	**19%**	**95**	**100%**

Volume 7, Issue 1; January-February 2024; Page No 348-365



Volume 7, Issue 1; January-February 2024; Page No 348-365

Correlations Related To Predictors With Risk Of Amputation

		RISK
BMI	Pearson Correlation	.608**
	Sig. (2-tailed)	***.000***
	N	95
Number of Comorbidities	Pearson Correlation	.655**
	Sig. (2-tailed)	***.000***
	N	95
HABITS	Pearson Correlation	.377**
	Sig. (2-tailed)	***.000***
	N	95
ABI	Pearson Correlation	-.885**
	Sig. (2-tailed)	***.000***
	N	95
WIFI	Pearson Correlation	.950**
	Sig. (2-tailed)	***.000***
	N	95
**. Correlation is significant at the 0.01 level (2-tailed).		

Regression Model Summary

R	**R**					
914[a]	Square	R Square Change	F Change	df1	df2	Sig. F Change
	.836	.836	74.787	6	88	***.000***

a. Predictors: (Constant), ABI, Gender, Age, BMI, Habits, Number of Comorbidities

Predictive Variables Related To The Risk Of Amputation

Model		Unstandardized Coefficients		t	P-Value
		B	Std Error		
1	(Constant)	.303	.550	.551	.583

Volume 7, Issue 1; January-February 2024; Page No 348-365

	Age	-.002	.005	-.354	.724
	Gender	-.057	.089	-.636	.526
	BMI	.019	.007	2.499	***.014***
	Number of Comorbiditis	.062	.062	1.006	.317
	HABITS	.012	.099	.123	.902
	ABI	-.115	.414	-.277	***.023***
	WIFI	.275	.032	8.491	***.000***

Dependent Variable: RISK

Discussion

The prevalence of diabetic foot ulcer is 6.3% worldwide. The highest prevalence of diabetic foot ulceration was reported in North America (13.0%) and the lowest prevalence was reported in Oceania (3.0%). The prevalence of diabetic foot ulcer was relatively higher in Africa (7.2%) than in Asia (5.5%) and Europe (5.1%). Diabetic foot ulceration is more common in male diabetic patients (4.5%) than female diabetic patients (3.5%). Diabetic foot ulceration is also more prevalent in patients with type 2 diabetic patient (6.4%) than with type 1 diabetic mellitus5.5%)[11].

Patients with Diabetes have a 12-25% lifetime risk of developing a foot ulcer. Foot ulcers have become a major and increasing public health problem; the morbidities, impairment of the quality of life of patients and the implied costs for management have attracted the attention of health policy providers. Inspite of their rising importance, the management provided for foot ulcers is often inadequate, resulting in delayed healing and eventually the possibilities of amputation. It is projected that developing countries will experience the greatest rise in the prevalence of Type 2 Diabetes in the next twenty years. The people living in these countries, therefore, could expect greater risks of foot ulceration[12].

The present study was conducted in ESIC MC & PGIMSR from the period January 2021 to January 2023. In this study 95 patients with diabetic foot infection were clinically assessed and evaluated to correlate to The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system for predicting the risk of amputation. Patients were followed up for a period of one year to check if the patients underwent amputation or not and correlated to The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system. The study revealed that as the Stage increases according to The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system the risk of amputation increases.

The Society for Vascular Surgery (SVS) recently proposed an integrated lower extremity threatened limb classification system based on Wound, Ischemia, and foot Infection (WIfI). It consists of a graded scoring system for wound, ischemia and foot infection[13]. For any given threatened limb, a severity grade of 0 to 3 (none, mild, moderate, severe) is assigned to grade the severity and extent of wound, ischemia, and foot infection, respectively. On the basis of these three scores, patients are further assigned to four threatened limb clinical stages corresponding to estimated risk of amputation derived by an expert panel consensus. The underlying premise of WIfI is that the risk of amputation increases as the presenting disease burden progresses from clinical stage 1 (very low risk) to stage 4 (high risk).

The stages were developed by a panel of specialists who used the Delphi method to arrive at a consensus categorization for each of the 64 possible combinations in the classification table[14].

The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system consists of 3 grade based on which the diabetic patients were assessed.

W: wound/clinical category

Volume 7, Issue 1; January-February 2024; Page No 348-365

In the SVS WIfI classification, the wound is classified according to its size, depth, severity, and (in contrast with previous classifications) the complexity of the procedure that is most likely needed for it to heal. Additionally, gangrene is included and stratified by extent of involvement[15,16]. A grade 0 patient does not have a wound. Grades 1, 2, and 3 are blended from published DFU (Diabetic foot ulcer) classification systems, but gangrene is also included and stratified by extent. In contrast to previous systems, WIfI also considers the anticipated complexity of the procedure(s) required to achieve wound healing. Grade 1 wounds are characterized by minor tissue loss salvageable with simple digital amputation or skin coverage. Grade 2 wounds are more advanced, but potentially salvageable with multiple digital amputations or at most, a standard trans-metatarsal amputation. Extensive tissue loss that will require amputation proximal to the level of a standard trans-metatarsal amputation (Chopart or Lisfranc) or will require a free flap or a large full thickness heel ulcer are assigned the highest class of severity, grade 3. Advanced gangrene upon presentation that precludes salvage of a functional foot is excluded from classification (stage 5)[17].

I: ischemia

The degree of ischemia can be measured using ABI (ankle brachial index), which, if ≥ 0.80, is classified as grade 0. If ABI is incompressible (> 1.3), TP (toe pressure) or TcPO2(trans cutaneous oxygen pressure) should be measured. Measurement of TP is obligatory in all patients with diabetes, because ABI could be falsely elevated because of calcifications. If ABI and TP result in different grades, TP will be the principal determinant of the degree of ischemia [15,16].

Especially in patients with diabetes and wounds complicated by infection, correction of intermediate perfusion deficits (0.4) may speed healing of smaller wounds, or even be required to heal extensive wounds. Patients in this intermediate perfusion range were classified as ischemia grades 1 and 2. If the ABI is unreliable or incompressible, TP or TcPO2 measurements must be performed to stratify the degree of ischemia. The latter measurements are preferred in patients with diabetes mellitus or the elderly, when ABI measurements may be falsely elevated because of medial calcinosis. Toe pressures are mandatory in all patients with diabetes mellitus and alternate perfusion measurements that may be especially applicable to patients with foot wounds, and a spectrum of ischemia may help quantify the degree of ischemia including pulse volume recordings, skin perfusion pressures and quantitative indocyanine green angiography[17].

fI: foot infection

The WIfI classifies presence and severity of infection, taking into consideration the earlier PEDIS classification (Perfusion, Extent, Depth, Infection and Sensation) and IDSA diabetic foot classification systems (Infectious Diseases Society of America.). The patient already shows systemic signs of infection if foot infection is defined as grade 3 or severe [15,16].

The presence and severity of infection and its threat to limb has been systematically ignored by many classification systems. The risk of amputation correlates directly with increasing infection severity. Especially in patients with diabetes, infection is often the major event that prompts hospitalization and leads to amputation; infection in the presence of PAD dramatically increases risk. The IDSA classification system is a clinical one that does not require complex imaging.42 A longitudinal study of 1666 persons with diabetes confirmed increased risk for amputation ($P < .001$), higher-level amputation ($P < .001$), and lower extremity-related hospitalization ($P < .001$) with increasing infection severity based on IDSA classification.

Infection can augment the need for perfusion both by increased metabolic activity and small vessel thrombosis attributable to angio-toxic enzymes. Worsening severity of ischemia likely further increases amputation risk in the presence of infection. Despite the clear importance of infection in the pathway toward major limb amputation in patients with lower extremity wounds and peripheral artery disease, infection is not even mentioned in the TASC, Rutherford, or Fontaine classification systems. Therefore, adapted the IDSA system into WIfI[17].

The SVS WIfI classification system is a first critical step toward re-examining the evaluation and treatment of patients with a spectrum of lower extremity arterial disease. It is intended to be an iterative process with the goal of more precisely stratifying patients according to their initial disease burden, analogous to TNM cancer staging, but not to

Volume 7, Issue 1; January-February 2024; Page No 348-365

dictate therapy. One important potential application of this system is for improved clinical trials design. Appropriate stratification of patients by clinical stage should yield a better platform for testing the impact of new therapies in randomized trials[18].

Application Of Wifi Stratification

The examples demonstrate the application of WIfI in the clinical setting- A 55-year-old man with diabetes, dry gangrene of two toes and a less than 2-cm rim of cellulitis at the base of the toes, but without systemic or metabolic toxicity has absent pedal pulses. The ABI is 1.5. The TP is 35 mm Hg. He would be classified as Wound 2 Ischemia 2 foot Infection 1 or W2I2fI1. The clinical stage would be 4 (high risk of amputation) according to The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system.

Summary And Conclusion

Ninety-five patients who were diagnosed with Type 2 diabetes mellitus above 18 years who came to the OPD or got admitted in ESIC MC & PGIMSR with complaints foot infection were evaluated and assessed. The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system for predicting the risk of amputation and the associated risk factors were studied.

1. This study showed 56.80% of the patients were male and 43.20% were females. Out of 54 male patients, 19 patients underwent amputation where as in 41 female patients, 16 patients underwent amputation showing males are at a higher risk of amputation compared to the females.
2. The risk of amputation increases with a higher BMI and older age group. The age group from 50 to 54 years were at a higher risk of amputation and the mean BMI associated with high risk of amputation was 31.45.
3. Smoking habit is associated with high risk of amputation.
4. Three different grades were used to assess the patient which was wound grade, ischemic grade and foot infection grade. All the grades showed significant association with the risk of amputation. As the grades increased from 0 to 3, the risk of amputation also increased.
5. Multiple co-morbidities were studied like Coronary Artery disease, heart failure, chronic obstructive pulmonary disease, myocardial infarction, chronic kidney disease on dialysis and hypertension with diabetes. In this study hypertension is associated with higher risk for amputation.
6. As the clinical stage progresses, the risk of major amputation increases.

This study supports the ability of The Society for Vascular Surgery Wound, Ischemia, and foot Infection classification system to predicting the risk of amputation.

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Volume 7, Issue 1; January-February 2024; Page No 348-365

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Volume 7, Issue 1; January-February 2024; Page No 348-365