

Lower Member Amputation by Diabetic Foot in Patients Attended at the University School Hospital, 2018

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Abstract

Objective: To analyze the factors related to diabetes mellitus and amputation.

Methods: We studied a universe of 224 patients of which 144 were amputated during their hospitalization in 2018 at the University School Hospital.

Results: The main amputated were men, the first cause was the diagnosis of type 2 diabetes mellitus, In addition, the percentage of admissions of patients aged 49 to 58 years with 47.1%, independently, other pathologies, such as: peripheral vascular disease, neuropathy, chronic renal failure.

Conclusions: The main cause of the amputation was due to a problem of inadequate care of the ulcer in the foot, which subsequently caused damage to the patient's tissue.

Keywords: Diabetic Foot/Diagnosis; Diabetic Foot/Surgery; Diabetic Foot/Complications; Amputation; Honduras

Introduction

The World Health Organization (WHO) defines Diabetes Mellitus (DM) as a chronic disease that appears when the pancreas does not produce enough insulin or when the body does not use efficiently the insulin that produces the uncontrolled effect is hyperglycemia [1].

In 2016 WHO estimated that 1.6 million deaths worldwide were directly caused by this pathology. DM continues to be one of the main public health problems, it is estimated that in Central and South America that same year there were 29.6 million people with diabetes and it is projected to be 48.8 million by 2040 [2].

It is also the main cause of blindness, kidney failure, infarction and lower limb amputation (AMI) [3] because of complications such as: neuropathies, vascular disease or both are one of the most important causes of disability in people with diabetes. The IMAs are more frequent in diabetic patients than in the general population. There is little data on the incidence and prevalence of AMI in Latin America [4].

In Mexico, according to figures from the Mexican Institute of Social Security (IMSS), 70% of amputations of lower extremities occur due to delayed medical care of foot injuries, especially in people with diabetes. Half of the amputations could have been avoided if the person had undergone adequate control of their metabolic disorder [5].

More than half of these cases are due to ulcers not managed properly [6]. It is estimated that every 30 seconds someone in the world loses a lower limb by total or partial amputation, as a consequence of diabetes, worldwide, on average the diabetic foot is it presents in 6.4% >, being more frequent in people with DM2 [7].

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Methods

Being a type of transversal retrospective study, with a simple random probabilistic sampling type, with a universe of available records of 224, calculating its sample with a 95% confidence index of 142 patients' records that have been amputated in the time of 2018.

The inclusion criteria were the following; patients over 18 years of age, whose amputation was due to diabetes complications and not due to direct traumas in the lower limbs, also that the file had the surgical authorization. Within the excluding criteria, it was taken into account that the patient was under age and that the surgical authorization was not found in the file.

The data was collected by means of an instrument with stratified dichotomous questions, which were aimed at the achievement of the objectives, they were tabulated and analyzed with the EpiInfo V7 software, helping us with the Microsoft Word package for the elaboration of graphs. Applying statistical tests of percentage and frequency.

Regarding the ethical aspects, all the participants have the course of good clinical practice in research of the World Health Organization, the files were also coded and no names are given that could identify those affected by the surgical intervention.

Results

Sociodemographic Clinical Characteristics (n = 142)		
Sex	n	%
Man	102	71.9%
Woman	40	28.1%
Age		
18 - 28	12	8.4%
29 - 38	18	12.6%
39 - 48	23	16.1%
49 - 58	67	47.1%
> 59	22	15.4%
Diabetes		
1	14	9.8%
2	128	90.1%
Amputated limb		
Right	98	69.01%
Left	44	30.9%
Type of amputation		
Higher	102	71.8%
Less	40	28.1%
Type of initial injury		
Ulcer	81	57.04%
Wound	11	7.7%
Vesicle	3	2.1%
Necrosis	47	33.09%

Table 1

Types of exams performed before the last amputation (n = 142)		
Exams	n	%
Clinical (Cl)	142	100%
Radiography (Rx)	101	71.1%
Arteriography (A)	89	62.6%
Doppler (D)	109	76.7%
Clinical only	72	50.7%
Cl + Rx	121	85.2%
Cl + Rx + A	63	44.3%

Table 2

Pathological backgrounds of patients (n = 142)		
Personal pathological background	n	%
Peripheral vascular disease	97	68.3%
Neuropathy	72	50.7%
EVP + Neuropathy	33	23.2%
Tumors	2	1.4%
Alcoholic neuropathy	15	10.5%
AIDS	1	0.7%
Chronic renal insufficiency	61	42.9%
Others	26	18.3%

Table 3

Discussion

Our study concludes that 90% of the patients admitted had type 2 diabetes mellitus, taking into account a study conducted in Spain in 2014 where 90 to 95% of the amputees suffered from this pathology [8].

In 2015, according to data from the Latin American Diabetes Association, 52.2% of patients admitted to a hospital in Rio de Janeiro had complications due to foot ulcers [9], coinciding with our study where 57.2% was the main reason for admission of patients and later of amputation.

Our statistics indicate that the highest frequency among the sociodemographic variables is led by men (71.9%) in Argentina. This same variant is shown with 74.5% of male patients affected by amputation of lower limbs. The opposite occurs in southwestern Iran in where a case-control study conducted during 2015 showed that 68% of patients had an amputation were women [10].

In our study the relation to the most affected ages are patients between 49 to 59 years old with 47.1% diverging from a study conducted in Brazil during 2015 where the most affected were patients aged 61.7 years, similar to Canada with an age of 65.7 years [11].

The results obtained show that the most frequent level of amputation was above the knee (71.8%), Similar results in Farro’s study [12].

The basis of the background of the population, the coincidences with a study carried out in Peru where this pathology had a significant association with the probability of amputation [13].

According to the type of amputation, we obtained results where minor amputations occupied 28.1% almost double the number of patients treated in a German hospital (11.3%) during 2015 [14].

Conclusion

The amputation of lower limbs is a consequence of type diabetes mellitus, mainly due to the inadequate care of the ulcerous appearance on foot, which eventually affects an amputation, the data of our country in relation to others of South America are relatively similarly, a greater gap was found in countries such as Canada, where the average age affected was greater or as Germany where the minor amputation had a low percentage in the patients admitted in relation to ours.

The complications due to the progression of the diabetes mellitus disease, especially in elderly patients, this is a situation that conditions the patient to be dependent on movement and increase the index of disability in the country. Apart from the psychiatric complications that are still without a specific treatment to this specific population.

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