

Hospital Mortality After Major Amputation of the Lower Limbs for Critical Ischemia

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Abstract: The prevalence of major amputations of lower limbs increases as the population ages. The aim of the current study was to evaluate hospital death in cases of major amputations for critical limb ischemia in a teaching hospital.

Hospital mortality during the peri-operative period was evaluated in 231 major amputations of legs due to critical limb ischemia between January 2005 and 2007. Thirty-six (15.6%) deaths occurred in this period, 14 women and 22 men (ages between 47 and 86). Of these patients, 13 (5.6%) died during the first hospitalization and 23 (9.9%) during re-hospitalizations within the first month.

High death rates were observed in the peri-operative period of major amputations of the lower limbs due to critical limb ischemia.

Keywords: Amputation, lower limbs, critical limb ischemia, mortality.

INTRODUCTION

Approximately 10% of over 55-year-olds have asymptomatic peripheral atherosclerotic disease, 5% have intermittent claudication and 1% have critical ischemia of the leg (pain at rest or gangrene) [1]. The most important risk factors for the development of critical ischemia of the legs are diabetes, smoking, arterial hypertension, lipid alterations, obesity and low blood pressure in the ankles [1-3]. Without therapy using medications or interventions, around 40% of these individuals lose their legs in less than 6 months and 20% die [2].

One study evaluated 2 random perspective trials comparing bypass surgery and angioplasty and found no significant difference in the amputation rates between the surgery and infrainguinal angioplasty groups; however these procedures were employed in only 15% of the patients with severe ischemia [3].

Of 150,000 amputations annually in the United States of America, peri-operative death occurred in 5% to 10% of the cases in which amputation was below the knee, increasing to 50% for amputations above the knee due to comorbidities [3]. Another study reported a peri-operative mortality rate of 15.7% [4]. A study in our service reported a mortality rate of 44% within the first year after major amputations of the legs, 50% within 2 years and 72% within 6 years [5]. As well as the high mortality rate, the quality of life of patients deteriorates.

The aim of the current study was to evaluate hospital death in cases of major amputations for critical limb ischemia in a teaching hospital.

METHODS

Hospital mortality during the peri-operative period was evaluated in 231 major amputations of legs due to critical limb ischemia between January 2005 and 2007 in Hospital de Base of the Medicine School of Sao Jose do Rio Preto (FAMERP). Patients with critical ischemia and necrosis of the lower limbs submitted to amputation above and below the knee were included in this study. The criterion for inclusion in this group was measuring the ankle-brachial pressure index (ABI) <0.6. Minor amputations of the foot or toes and amputations due to trauma were not included.

The study was approved by the Research Ethics Committee of FAMERP. Were evaluated the prevalence of events.

RESULTS

In this period, 36 (15.6%) deaths occurred; 14 women and 22 men (age ranging between 46 and 86). Of these deaths, 13 (5.6%) died during the first hospitalization, 1 during 24 h and 12 during the first week, and 23 (9.9%) during re-hospitalizations within the first month.

DISCUSSION

The current study shows a high peri-operative mortality rate for major amputations of the lower limbs due to critical ischemia [3,4]. One aspect that highlights the severity of the disease is the internationally published data on mortality rates that report deaths in between 72% and 92% of the cases within the first 6 to 8 years of follow up [5,7]. The deterioration of the quality of life after amputation is a second negative factor [6].

These patients require greater postoperative care with respect to pain, edema, mobility of limbs, prevention of contractures and psychological support. Thus, the involvement of an interdisciplinary team is recommended in these cases

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including physiotherapy, occupational therapy, psychology, the supply of prosthesis and social services [8].

The decision to operate or not in critical limb ischemia cases should contemplate revascularization and when the functional capacity of the limb is not restored, primary amputations should be considered [9].

In the current study the patients were treated in a tertiary hospital where referred cases require greater care. The mortality rate during the initial period of hospitalization was 5.6% which, within 1 month, increased to 15.6%. Another study by the same authors identified a mortality rate of 44% within 1 year of amputation and 50% in the first 2 years [5]. Thus, the mortality rate remains high during the first year after amputation. The limitations of this study include that it could not evaluate the factors (e.g. infection, diabetes) [10] involved with each amputation and their possible relationship with mortality. However, we need to alert patients as to the high mortality in this population.

Prevention of peripheral artery insufficiency is of fundamental importance to improve the life expectancy of this population as well as with coronary heart disease.

CONCLUSIONS

High death rates were observed in the peri-operative period after major amputations of the lower limbs due to critical limb ischemia.

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