



Original Article

Social profile and cost analysis of deep infection following total hip replacement surgery



Vera Lucia Frazão^a, Helder de Souza Miyahara^a, Ricardo Akihiro Kirihara^a, Ana Lucia Lei Munhoz Lima^b, Alberto Tesconi Croci^b, José Ricardo Negreiros Vicente^{a,*}

^a Instituto de Ortopedia e Traumatologia, Faculdade de Medicina, Universidade de São Paulo, São Paulo, SP, Brazil

^b Departamento de Ortopedia e Traumatologia, Faculdade de Medicina, Universidade de São Paulo, São Paulo, SP, Brazil

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ABSTRACT

Objective: To characterize the socio-economic and demographic profile of patients undergoing surgery for revision total hip arthroplasty regarding the diagnosis of deep prosthetic infection.

Methods: Twenty patients were retrospectively studied, admitted in the period between 2009 and 2010 by the Hip Surgery Group with the diagnosis of deep prosthetic infection, whose proposed treatment was surgical. This study was carried out in the presence of the patient by completing two forms applied by the social worker of the Group.

Results: In a 20-patient sample, 40% were male, 45% were working age, 50% of patients originated from the capital, 85% depended on benefits, 70% were retired, 60% of patients were from this hospital, and 40% were from other services. The average cost of patients to the public system was R\$ 55,821.62 per patient and the total spent on treatment of patients in the study exceeded one million Brazilian reals, totalling R\$ 1,116,432.40.

Conclusion: Infection from total hip arthroplasty generates a major expense to the social security system and to the public healthcare system. Physicians must always be alert to the possible risk factors and perioperative care, striving to minimize this complication.

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Perfil social e análise de custo da infecção pós-operatória da artroplastia total do quadril

RESUMO

Objetivo: Caracterizar o perfil socioeconômico e demográfico de pacientes submetidos à cirurgia de revisão de artroplastia total do quadril por diagnóstico de infecção protética profunda.

Palavras-chave:

Artroplastia de quadril

Infecção

Análise de custo

* Corresponding author.

E-mail: rmnegreiros@gmail.com (J.R. Vicente).

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Métodos: Análise de 20 pacientes internados entre 2009 e 2010 pelo Grupo de Quadril com diagnóstico de infecção protética profunda cujo tratamento proposto foi cirúrgico. O trabalho foi feito com preenchimento na presença do paciente de dois formulários aplicados pela assistente social do grupo.

Resultados: Na amostra de 20 pacientes, 40% pertenciam ao sexo masculino, 45% estavam em idade produtiva, 50% eram originários da capital, 85% previdenciários, 70% aposentados, 60% provenientes do próprio hospital e 40% de outros serviços. A média de custo dos pacientes ao sistema público foi de R\$ 55.821,62 por paciente, o gasto total no tratamento dos pacientes do estudo totalizou R\$ 1.116.432,40.

Conclusão: Conclui-se que a artroplastia total do quadril infectada gera um grande gasto ao sistema previdenciário e ao sistema de saúde público, deve-se, portanto, sempre atentar para os possíveis fatores de risco e cuidados perioperatórios para que esse problema seja evitado.

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Introduction

Among the possible complications of total hip arthroplasties, prosthetic infection is one of the most devastating, with serious consequences for patients, since most of them will require further surgical interventions; furthermore, they are associated with high costs for the paying sources. They are also associated with periods of work leaves, also overburdening the social security system.

A number of factors are related to the increased risk of prosthetic infection, including obesity, diabetes, immunosuppression, previous large hip surgeries, smoking, malnutrition, prolonged corticoid therapy, and prolonged surgical time, among others.^{1,2}

In Brazil, Law 9.431/97 has made hospital infection surveillance mandatory, in order to systematically reduce the prevalence of this complication as a whole in the various medical specialties.³ The Pan American Health Organization coordinated the *Study on the efficacy of nosocomial infection control*, conducted in Atlanta (United States). That study concluded that hospital stay increases the duration of the infection by a mean of four days, with an additional cost per patient of \$ 1800 on admission.⁴

The present study is aimed at establishing the socioeconomic and demographic profile of patients who underwent total hip arthroplasty revision at this medical service due to a diagnosis of deep prosthetic infection, and to identify the costs involved in the treatment of these patients.

Methods

After approval by the Research Ethics Committee, a retrospective descriptive study was conducted with qualitative and quantitative analysis.

The study included patients admitted between 2009 and 2010 by The Hip Group of a quaternary university hospital, with a diagnosis of deep prosthetic infection in whom the proposed treatment was surgical. Patients with infection resulting from total hip arthroplasty revision surgery and

those who required intravenous antibiotic therapy as definitive treatment without the need for surgical treatment were not included. Furthermore, patients who did not agree to sign the informed consent form to participate in the project were also excluded.

The study was carried out by completing, in the patient's presence, two forms applied by the social worker of the group, the main author of this study.

Questionnaire 1 (*Appendix*) addressed the social and family data of patients, as well as those inherent to treatment.

Questionnaire 2 (*Appendix*) addressed the socioeconomic issues based on the Brazil Economic Classification, a criterion adopted by the Brazilian Association of Research Companies (Associação Brasileira de Empresas de Pesquisa [Abep]),⁵ which assesses the purchasing power of the population and the degree of education of the head of the family, stratifying the population at the following levels: A1, A2, B1, B2, C1, C2, D, and E. Both forms were pre-tested in five patients, attempting to solve possible execution and reproducibility issues.

The study included 20 patients, from an initial population of 24 patients, who met the inclusion criteria in the study period. Two patients died due to causes unrelated to the initial diagnosis, one continued treatment in the Supplementary Health System, and one did not sign the Informed Consent Form.

Results

Patient's sociodemographic and family data are shown in *Table 1*.

Fig. 1 stands for patient distribution according to socioeconomic level.

The mean number of days on antibiotic therapy, whether intravenous or oral, was 266 days (30–376).

The mean cost of patients to the public system, considering the entire hospitalization period, surgical material, and medication, including home treatment, was R\$ 55,821.62 (R\$ 3,472 to R\$ 109,456) per patient. The total cost of treatment of patients in the study was R\$ 1,116,432.40.

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