



Original Article

Postoperative comparison of the results from use of antibiotic prophylaxis for one and five days among patients undergoing lumbar arthrodesis[☆]



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ABSTRACT

Objective: To compare the postoperative results from use of antibiotic prophylaxis for one and five days among patients undergoing lumbar arthrodesis at up to three levels.

Methods: Forty-three patients who all underwent lumbar arthrodesis due to degenerative disc disease at one, two or three levels were evaluated. They were divided randomly into two groups: one received antibiotic prophylaxis with cefalotin (1 g) and the other received the same antibiotic for five days. After the surgical intervention, the patients were evaluated at the time of hospital discharge, at the first return to the clinic (two weeks later) and 90 days after the date of the surgery with the surgical wound, with clinical examination of the surgical wound and laboratory tests on both groups.

Results: It was observed that among the patients in the group with one day of antibiotic prophylaxis, 28.6% presented complications in the surgical wound, while in the group with five days, 27.9% presented complications.

Conclusion: This study demonstrates that a single dose of antibiotic prophylaxis is as effective as a regimen of multiple doses in lumbar arthrodesis surgery at up to three levels. Thus, the costs and risks of subjecting patients to hospitalization under a prolonged drug regimen are unjustifiable.

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[☆] Study conducted at the Spine Group, Hospital Santa Casa de Misericórdia de Vitória, Vitória, ES, Brazil.

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Comparaç o p s-operat ria dos resultados do uso de antibioticoprofilaxia por um e cinco dias em pacientes submetidos   artrodese lombar

R E S U M O

Palavras-chave:

Antibioticoprofilaxia
Cirurgia coluna vertebral
Cefalosporinas

Objetivo: Comparar os resultados p s-operat rios do uso da antibioticoprofilaxia por um e cinco dias nos pacientes submetidos   artrodese lombar de at  tr s n veis.

M todos: Foram avaliados 43 pacientes, todos submetidos   artrodese lombar devido   doena degenerativa discal com um, dois ou tr s n veis. Divididos de forma randomizada em dois grupos, um grupo recebeu antibioticoprofilaxia com cefalotina 1g e o outro grupo recebeu o mesmo antibi tico por cinco dias. Ap s a intervenao cir rgica, fez-se a avaliaao dos pacientes na data da alta, no primeiro retorno ao ambulat rio, ap s duas semanas, e ap s 90 dias da data do procedimento cir rgico, com exame cl nico da ferida operat ria e exames laboratoriais de ambos os grupos.

Resultados: Observou-se que os pacientes do grupo com um dia de antibioticoprofilaxia, 28,6% apresentaram complicaoes na ferida operat ria e o grupo de cinco dias, 27,9%.

Conclus o: Este estudo demonstra que uma  nica dose de antibioticoprofilaxia   t o eficaz quanto o regime de m ltiplas doses em cirurgias de artrodese lombar at  tr s n veis. N o justifica os custos e riscos de submeter o paciente a internaç o sob regime medicamentoso prolongado.

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Introduction

Low back pain with or without sciatica affects approximately 80% of the world population. Spinal instability, with or without disc disease, is an important etiology of this disease.

In cases of low back pain refractory to conservative treatment, and after careful and accurate diagnosis of vertebral instability, lumbar arthrodesis (which consists of spinal fusion) is indicated.

Although lumbar arthrodesis is a good method for pain relief, it also presents complications; one of the most important is surgical site infection (SSI). Although its incidence is low, its effects are devastating. SSI can lead to economic loss and injury to patients due to several factors, including the need for prolonged use of antimicrobial drugs and secondary surgery, among others. SSI is also highly disadvantageous for physicians from the cost-effectiveness standpoint.¹

The risk factors associated with infection can be divided into those intrinsic to the patient, such as smoking, diabetes, malnutrition, obesity, rheumatoid arthritis, chronic use of corticosteroids, and neoplasms, and extrinsic, such as increased surgical time and high number of professionals in the surgical field.²

Some measures adopted in the intraoperative and immediate postoperative period may help to decrease the rate of postoperative infections. Among them, the maintenance of the aseptic field, attention to hemostasis, devitalized tissue minimization, proper use of drains, and antibiotic prophylaxis are highlighted.²

Antibiotic prophylaxis is the main method to prevent this complication. Its importance and efficiency during surgery are known: a significant reduction in the number of infections is observed in patients who receive it.³

Some studies have shown that a single dose of antibiotic is as effective as multiple-dose prophylaxis. However, this is not universally accepted. This study aimed to compare the postoperative results of patients on antibiotic prophylaxis for one and five days that underwent up to three-level lumbar arthrodesis.

Material and methods

Forty-three patients were assessed through a prospective, randomized study after approval from the institution's Research Ethics Committee (#12039513.9.0000.5065). All patients underwent lumbar fusion due to degenerative disc disease for one, two, or three levels. After surgery, patients were assessed on the day of discharge, at the first outpatient follow-up, after two weeks, and 90 days after surgical procedure, where clinical evaluation of the wound and laboratory tests for both groups were carried out.

Inclusion criteria comprised patients who underwent lumbar arthrodesis in up to three levels due to degenerative diseases and who were followed-up at the orthopedic clinic of this institution. Patients who underwent lumbar arthrodesis for reasons other than degenerative disease, such as tumors or fractures, and those who underwent lumbar arthrodesis for more than three levels were excluded.

After inclusion in the study, patients were assigned a number (one or two) by drawing lots, which defined the group they belonged to. Group 1 received antibiotic prophylaxis with first-generation cephalosporin for one day and Group 2, same antibiotic but for five days.

Results of the clinical assessment of the surgical wound and pre- and postoperative laboratory tests (hemoglobin, hematocrit, white blood cell count, neutrophils, erythrocyte

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