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SCIENTIFIC ARTICLE

Pain after major elective orthopaedic surgery of the lower limb and type of anaesthesia: does it matter?☆

Diogo Luís Pereira[a,*], **Hugo Lourenço Meleiro**[b], **Inês Araújo Correia**[b], **Sara Fonseca**[a,c]

[a] *Universidade do Porto, Porto, Portugal*
[b] *Centro Hospitalar São João, Porto, Portugal*
[c] *Department of Anaesthesiology, Centro Hospitalar São João, Porto, Portugal*

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KEYWORDS
Arthroplasty;
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Abstract
Background and objectives: Total knee arthroplasty and total hip arthroplasty are associated with chronic pain development. Of the studies focusing on perioperative factors for chronic pain, few have focused on the differences that might arise from the anaesthesia type performed during surgery.
Methods: This was a prospective observational study performed between July 2014 and March 2015 with patients undergoing unilateral elective total knee arthroplasty (TKA) or total hip arthroplasty (THA) for osteoarthritis. Data collection and pain evaluation questionnaires were performed in three different moments: preoperatively, 24 hours postoperatively and at 6 months after surgery. To characterize pain, Brief Pain Inventory (BPI) was used and SF-12v2 Health survey was used to further evaluate the sample's health status.
Results: 43 patients were enrolled: 25.6% men and 74.4% women, 51,2% for total knee arthroplasty and48.8% for total hip arthroplasty, with a mean age of 68 years. Surgeries were performed in 25.6% of patients under general anaesthesia, 55.8% under neuraxial anaesthesia and 18.6% under combined anaesthesia. Postoperatively, neuraxial anaesthesia had a better pain control. Comparing pain evolution between anaesthesia groups, neuraxial anaesthesia was associated with a decrease in ''worst'', ''medium'' and ''now'' pain at 6 months. Combined anaesthesia was associated with a decrease of ''medium'' pain scores at 6 months. Of the 3 groups, only those in neuraxial group showed a decrease in level of pain interference in ''walking ability''. TKA, ''worst'' pain preoperatively and general were predictors of pain development at 6 months.
Conclusions: Patients with gonarthrosis and severe pain preoperatively may benefit from individualized pre- and intraoperative care, particularly preoperative analgesia and neuraxial anaesthesia.

☆ Performed in Centro Hospitalar São João (CHSJ), Alameda Prof. Hernâni Monteiro, 4200–319 Porto, Portugal.

* Corresponding author.
E-mail: mimed09064@med.up.pt (D.L. Pereira).

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PALAVRAS-CHAVE
Artroplastia;
Tipo de anestesia;
Dor no pré-operatório;
Dor no pós-operatório;
Dor crônica;
Dor crônica no pós-operatório

A dor após cirurgia eletiva ortopédica de grande porte em membro inferior e o tipo de anestesia: isso importa?

Resumo
Justificativa e objetivos: A artroplastia total de joelho e a artroplastia total de quadril estão associadas ao desenvolvimento de dor crônica. Dentre os estudos que avaliam os fatores perioperatórios para a dor crônica, poucos abordam as diferenças que podem surgir do tipo de anestesia realizada durante a cirurgia.
Métodos: Estudo observacional, prospectivo, realizado entre julho de 2014 e março 2015 com pacientes submetidos à ATJ unilateral eletiva ou ATQ para a osteoartrite. A coleta de dados e a avaliação da dor por meio de questionários foram realizadas em três momentos distintos: no pré-operatório, em 24 horas de pós-operatório e aos seis meses após a cirurgia. O Inventário Breve da Dor (IBD) foi usado para caracterizar a dor o e o Questionário SF-12v2 foi usado para avaliar melhor o estado de saúde da amostra.
Resultados: Quarenta e três pacientes foram inscritos: 25,6% homens e 74,4% mulheres, 51,2% para ATJ e 48,8% ATQ, com média de idade de 68 anos. A cirurgia foi realizada em 25,6% dos pacientes sob anestesia geral, em 55,8% sob anestesia neuroaxial e em 18,6% sob anestesia combinada. No pós-operatório, a anestesia neuraxial apresentou melhor controle da dor. Na comparação da evolução da dor entre os grupos, a anestesia neuraxial foi associada a uma diminuição de ''pior'', ''médio'' e ''sem'' dor em seis meses. A anestesia combinada foi associada a uma diminuição do escore ''médio'' de dor em seis meses. Dos três grupos, apenas aqueles no grupo neuraxial apresentaram uma diminuição do nível de interferência da dor na ''capacidade de caminhar''. ATJ, ''pior'' dor no pré-operatório e anestesia geral foram preditivos de desenvolvimento de dor aos seis meses.
Conclusões: Os pacientes com gonartrose e dor intensa no pré-operatório podem obter benefício de cuidados individualizados no pré e intraoperatório, particularmente de analgesia no pré-operatório e anestesia neuraxial.

Introduction

Total Knee Arthroplasty (TKA) and Total Hip Arthroplasty (THA) are common elective procedures whose demand is continually rising due to ageing population.[1] According to the Portuguese Arthroplasty Register 4234 primary TKA and 4440 primary THA were performed in Portugal in 2013, 80 and 63 of these, respectively, in Centro Hospitalar São João.[2]

The major aim of these surgeries is to relief pain, improve quality of life, physical activity and mobility, allowing a better social and psychological well-being.[3] Various authors have studied this and pain relief was identified as the most important factor concerning quality of life, followed by psychological well-being and restoration of physical activity.[4] Despite the high satisfaction rates published,[5] up to 20% of TKA[5] and 7% of THA[6] patients remain dissatisfied after surgery and require post-surgical supplementary medical treatment, producing an additional burden for the national healthcare system.[7]

The final decision to undergo surgery is based on a surgeon–patient agreement. The clinical criteria are different between orthopaedic centres[8] and even willingness among patients depends on age, gender, race, socioeconomic status and pain.[9] This difference is even higher among orthopaedic surgeons, rheumatologists and primary care providers. The only common criteria among all is pain not responsive to drug therapy.[10]

Chronic post-surgical pain has been associated to TKA and THA in several studies. Despite the technological and technical improvements,[11,12] there is still a group of patients with pain after surgery.[13] Pain-related distress, such as frustration, anger and depression, do not correlate solemnly to the pain intensity but also with individual belief, expectation and perception of their condition.[14]

During the last years, investigators are searching for chronic pain predictors after TKA and THA in order to diminish its incidence. Preoperative pain intensity, disease duration and post-surgical anxiety were considered the main predictors for chronic pain development after an uncomplicated surgery.[15] Other factors that have shown relation with chronic pain include female sex, younger age at the time of surgery[16,17] and pain in other locations.[18]

Differences in postoperative pain control due to anaesthesia technique (neuraxial anaesthesia versus general anaesthesia) for lower limb joint replacement have been demonstrated. Neuraxial anaesthesia improves postoperative outcomes by relieving pain, reducing pulmonary complications, allowing early mobilization and shortening the length of hospital stay.[19,20] It is also associated with a decrease in systemic infections[21] and mortality.[22]

The aim of this study is to evaluate if the type of anaesthesia interferes with postoperative pain in a population of patients submitted to TKA or THA.

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