



REVISTA BRASILEIRA DE ANESTESIOLOGIA

Official Publication of the Brazilian Society of Anesthesiology
www.sba.com.br



SCIENTIFIC ARTICLE

Effect of low dose dexmedetomidine premedication on propofol consumption in geriatric end stage renal disease patients



Pinar Ergenoglu*, Sule Akin, Cagla Bali, Hatice Evren Eker, Oya Yalcin Cok, Anis Aribogan

Baskent University School of Medicine, Anesthesiology and Reanimation Department, Adana, Turkey

Received 17 September 2014; accepted 11 November 2014

Available online 2 May 2015

KEYWORDS

Geriatric patient;
End stage renal
disease;
Dexmedetomidine;
Propofol

Abstract

Background and objective: Sedation in dialysis dependent end-stage renal disease patients requires caution as a result of performing high doses of sedatives and its complications. Multidrug sedation regimens might be superior and advantage on lesser drug consumption and by the way adverse events which occur easily in end-stage renal disease patients. We evaluated the effects of dexmedetomidine premedication on propofol consumption, sedation levels with Observer's Assessment of Alertness and Sedation scores and the bispectral index and the hemodynamic changes, potential side effects in geriatric patients with end-stage renal disease who underwent hip fracture surgery under spinal anesthesia.

Method: In this randomized, controlled, double-blind study 60 elderly patients (age ≥ 65 years) with end-stage renal disease and hip fracture scheduled for antegrade femoral intramedullary nailing were assigned to groups that received either intravenous saline infusion (Group C) or dexmedetomidine 0.5 $\mu\text{g}/\text{kg}/10$ min infusion for premedication (Group D). All the patients received propofol infusion after the induction of the spinal anesthesia.

Results: Total propofol consumption, propofol dose required for targeted sedation levels according to Observer's Assessment of Alertness and Sedation scores and bispectral index levels, recovery times were significantly lower in Group D ($p < 0.001$). The time to reach to Observer's Assessment of Alertness and Sedation score 4 and to achieve bispectral index ≤ 80 was significantly lower in Group C compared with Group D ($p < 0.001$). Adverse events were similar in both groups.

Conclusion: Dexmedetomidine premedication lowers intraoperative propofol consumption to maintain targeted level of sedation. Therefore low dose dexmedetomidine premedication in addition to propofol infusion might be an alternative in geriatric patients with end-stage renal disease for sedation.

© 2015 Sociedade Brasileira de Anestesiologia. Published by Elsevier Editora Ltda. All rights reserved.

* Corresponding author.

E-mail: pergenoglu@yahoo.com (P. Ergenoglu).

PALAVRAS-CHAVE

Paciente geriátrico;
Doença renal em
estágio terminal;
Dexmedetomidina;
Propofol

Efeito da pré-medicação com dose baixa de dexmedetomidina sobre o consumo de propofol em pacientes geriátricos com doença renal em estágio terminal**Resumo**

Justificativa e objetivo: A sedação em paciente dependente de diálise com doença renal em estágio terminal (DRET) requer cautela como resultado da administração de altas doses de sedativos e suas complicações. Os regimes de sedação com múltiplas drogas podem ser superiores e vantajosos em relação ao consumo menor de drogas e aos eventos adversos que ocorrem facilmente em pacientes com DEET. Avaliamos os efeitos da pré-medicação com dexmedetomidina sobre o consumo de propofol, os níveis de sedação com os escores da *Observer's Assessment of Alertness and Sedation* (OAA/S) e do índice bispectral (BIS), as alterações hemodinâmicas e os potenciais efeitos colaterais em pacientes geriátricos com DRET submetidos à cirurgia para fratura de quadril sob raquianestesia.

Método: Neste estudo randômico, controlado e duplo-cego, 60 pacientes idosos (idade ≥ 65 anos), com DRET e fratura de quadril, agendados para fixação intramedular de haste femoral anterógrada foram designados para grupos para receberem infusão intravenosa de solução salina (Grupo C) ou pré-medicação com infusão de 0,5 mg/kg/10 min de dexmedetomidina (DEX) (Grupo D). Todos os pacientes receberam infusão de propofol após a indução da raquianestesia.

Resultados: O consumo total de propofol, a dose de propofol necessária para os níveis-alvo de sedação de acordo com os escores da OAA/S, os valores do BIS e os tempos de recuperação foram significativamente menores no Grupo D ($p < 0,001$). O tempo para atingir o escore 4 na OAA/S e valores BIS ≤ 80 foi significativamente inferior no Grupo C em comparação com o Grupo D ($p < 0,001$). Os eventos adversos foram semelhantes em ambos os grupos.

Conclusão: A pré-medicação com dexmedetomidina reduz o consumo de propofol no intraoperatório para manter o nível-alvo de sedação. Portanto, a pré-medicação com DEX em dose baixa em combinação com infusão de propofol pode ser uma alternativa para sedação em pacientes geriátricos com DRET.

© 2015 Sociedade Brasileira de Anestesiologia. Publicado por Elsevier Editora Ltda. Todos os direitos reservados.

Introduction

The incidence of end stage renal disease and dialysis population in the elderly continues to increase universally.¹⁻³ Hip fractures are also major problem and the anesthesia technique should be planned in detail due to potential alterations in volume distribution, protein binding, and drug metabolism and excretion.⁴⁻⁶ In an ideal anesthesia regime, the most important parameters are providing hemodynamic stability with optimal fluid and electrolyte balance, using drugs with a lower metabolism, shorter half-life and non-renal clearance, targeting early recovery and return of cognitive and psychomotor functions.⁷

Neuraxial techniques such as single spinal injection is frequently performed for the intraoperative anesthesia management of patients with chronic renal failure.⁸ Co-administration of spinal anesthesia and sedation became a standard protocol for providing patients' anxiolysis and amnesia at the intraoperative period.⁹ Propofol is the frequently used agent and combination regimens such as propofol vs alfentanil or midazolam vs fentanyl for sedation are commonly used in patients with chronic renal failure.^{10,11} The sedoanalgesia drug doses should be titrated and to reduce dose consumption combination regimens should be performed in hemodialysis patients.¹²

Dexmedetomidine (DEX) is a selective α_2 receptor agonist agent, might be an alternative of choice for combination regimen with propofol due to its sedative and analgesic

properties with minimal effects on ventilation.¹³ There are limited number of studies investigating the effect of DEX in patients with end stage renal disease (ESRD), however these studies are not specific to geriatric patients at the same time.^{14,15}

In this study we evaluate the effects of dexmedetomidine premedication on propofol consumption, sedation levels, hemodynamic changes, potential side effects in geriatric patients with ESRD who underwent hip fracture surgery under spinal anesthesia.

Materials and methods

This study was approved by the Baskent University Institutional Review Board and Ethics Committee (Project no: KA12/166). After obtaining written informed consent from the patients, 60 elderly patients (age ≥ 65 years) with end stage renal failure on dialysis treatment (glomerular filtration rate < 15 , Stage 5) and hip fracture scheduled for anterograde femoral intramedullary nailing were included in this double-blind, randomized, controlled study. Exclusion criteria were decompensated respiratory or heart failure, liver failure, obesity (body mass index > 30), mental disorders, cognitive disorders, language problems, patients with a contraindication for regional anesthesia (coagulopathy, history of anticoagulant use, spinal cord disease and patients

Download English Version:

<https://daneshyari.com/en/article/2750308>

Download Persian Version:

<https://daneshyari.com/article/2750308>

[Daneshyari.com](https://daneshyari.com)