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SCIENTIFIC ARTICLE

Risk factors associated with anesthesia emergence delirium in children undergoing outpatient surgery



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KEYWORDS

Pain;
Child;
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Abstract

Introduction: Anesthesia emergence delirium is a self-limiting clinical phenomenon very common in children. Although pathophysiology is still uncertain, some factors seem to be involved, such as rapid awakening in an unknown environment, agitation during anesthetic induction, preoperative anxiety, environmental disorders, use of preanesthetic medication, use of inhalational anesthetics, and postoperative pain.

Objective: To determine the prevalence and risk factors associated with anesthesia emergence delirium in children undergoing outpatient surgery.

Methods: A prospective observational study was carried out with 100 children aged 2–10 years, who underwent surgery on an outpatient basis. The study variables were: anesthesia emergence delirium and the associated risk factors (preoperative anxiety, child impulsive behavior, use of pre-anesthetic medication, traumatic induction, type of anesthesia, and postoperative pain). Multivariate Poisson's logistic regression was used to analyze the possible explanatory variables, where the prevalence ratios were estimated with the respective 95% confidence intervals, considering a significance level of 5%.

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Results: Delirium and pain were observed in 27% and 20% of children, respectively. Only postoperative pain after Poisson's regression, was shown to be associated with anesthesia emergence delirium, with a prevalence ratio of 3.91 ($p < 0.000$).

Conclusion: The present study showed 27% prevalence of anesthesia emergence delirium in the study population. The incidence of anesthesia emergence delirium was higher in children who had postoperative pain.

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PALAVRAS-CHAVE

Dor;
Criança;
Delírio

Fatores de risco associados a delírio no despertar da anestesia em crianças submetidas à cirurgia ambulatorial

Resumo

Introdução: Delírio ao despertar anestésico é um fenômeno clínico autolimitado muito comum em crianças. Apesar de fisiopatologia ainda incerta, alguns fatores parecem estar envolvidos, como despertar rápido em um ambiente desconhecido, agitação durante a indução anestésica, ansiedade pré-operatória, perturbações ambientais, uso de medicação pré-anestésica, uso de anestésicos inalatórios e dor pós-operatória.

Objetivo: Determinar a prevalência e os fatores de risco associados ao delírio ao despertar anestésico em crianças submetidas à cirurgia ambulatorial.

Métodos: Estudo observacional prospectivo, envolveu 100 crianças entre dois e 10 anos, submetidos à cirurgia em caráter ambulatorial. As variáveis de estudo foram: delírio ao despertar anestésico e os fatores de risco associados (ansiedade pré-operatória, comportamento impulsivo da criança, uso de medicação pré-anestésica, indução traumática, tipo de anestesia e dor pós-operatória). Foi feita a regressão multivariada de Poisson para análise das possíveis variáveis explanatórias, na qual foram estimadas as razões de prevalência com os respectivos intervalos de confiança de 95%, considerou-se o nível de significância de 5%.

Resultados: Delírio e dor foram observados em 27% e 20% das crianças respectivamente. Apenas a dor no pós-operatório, após a regressão de Poisson, mostrou ter uma associação com o delírio ao despertar anestésico, cuja razão de prevalência foi 3,91 ($p < 0,000$).

Conclusão: O presente estudo evidenciou uma prevalência de delírio ao despertar anestésico de 27% na população estudada. A incidência de delírio ao despertar anestésico foi maior em crianças que apresentaram dor no pós-operatório.

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Introduction

Anesthesia emergence delirium (AED) is a transient state of irritation and dissociation, which occurs after discontinuation of anesthesia in some patients and is not responsive to consolation. Also known as post-anesthetic delirium, it is characterized by mental confusion, irritability, disorientation, inconsolable crying, and prolonged post-anesthetic recovery time.¹⁻³

AED incidence varies widely according to its definition, patient's age, anesthetic technique used, surgical procedure, and use of adjunctive medication. The rates usually range from 10% to 50%, and it may affect up to 80% of patients.¹⁻⁵

It is believed that this phenomenon occurs most commonly in children from 2 to 5 years old, who undergo

relatively painful surgical procedures under general inhaled anesthesia.⁶ Regarding the associated factors, many have been suggested as possible triggers of AED, such as rapid awakening in an unknown environment, agitation during anesthetic induction, preoperative anxiety, airway obstruction, environmental disorders, use of pre-anesthetic medication, anesthetic technique, type of anesthetic used (inhaled, venous), and postoperative pain.^{5,7,8}

Although self-limited and of short duration, the occurrence of AED predisposes the child to traumatic injuries in the early postoperative period and produces intense anxiety in parents and, therefore, it is a cause of concern for anesthesiologists and pediatric surgeons.⁶⁻¹⁰

In view of the above, the purpose of this study was to determine the prevalence and risk factors associated with AED in children undergoing outpatient surgery.

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