

Nitrazepam Induced Drooling and Aspiration in Children With Epilepsy

Carolina FAA Moreira (IC), Maria Augusta Montenegro (PQ), Marilisa M Guerreiro (PQ)

Abstract

Nitrazepam is an antiepileptic drug that may induce upper airway hypersecretion. The objective of this study is to evaluate the frequency of nitrazepam induced drooling and aspiration in children with epilepsy.

Key words: hypersecretion, nitrazepam, epilepsy, children

Introduction

Nitrazepam is antiepileptic drug used in several types of epilepsy. There are reports of its association with upper airway hypersecretion, especially in children (1). Therefore, aspiration and pneumonia may occur (2). The objective of this study was to evaluate the occurrence of upper airway abnormalities in children with epilepsy in use of nitrazepam.

Results and Discussion

This study was conducted at the pediatric epilepsy clinic of Hospital das Clínicas da Unicamp. Twenty patients were included. The data was compared with a disease control group of children with epilepsy without any current use of any type of benzodiazepine. Twelve were boys and 8 were girls, aged between 5 months-old and 17 years-old (mean age of 3.97 years). In the control group 8 were boys and 12 girls, ages between 1 year-old and 18 years-old (mean 8.24 years).

Table 1 - Type of upper airway abnormality presented by patients in use of nitrazepam.

Type of Upper Airway Abnormality (total of 7 patients)	Number of patients
Drooling	5
Pneumonia	2
Increased choking	1
Difficult in feeding the child	0
Increased coughing	1
Wheezing / Ronchi	2

* Some patients present more than one type of upper airway abnormality

Seven children using nitrazepam presented airway hypersecretion, as opposed to none in the control group. Three children were admitted to the hospital (one due to the hypersecretion, and 2 due to pneumonia).

All patients had refractory epilepsy. After introduction of nitrazepam 2 patients became seizure free; 13 had an improvement of more than 75% control; and two an improvement of more than 50% in seizure control. Three patients had no improvement in seizure control.

Because most patients presented a great improvement in seizure control, nitrazepam was not tapered off due to upper airway abnormalities. Most families chose to increase pulmonary physical therapy in order to improve pulmonary symptoms.

Conclusions

Children with epilepsy in use of nitrazepam have an increase risk of drooling, aspiration and upper airway adverse effects. The risk of serious pulmonary complications should be carefully evaluated before prescribing this drug.

Acknowledgement

We would like to thank the neurology department of UNICAMP and Hospital de Clínicas da UNICAMP for making this project possible. This Project was sponsored by Universidade Estadual de Campinas (UNICAMP).

¹ Chamberlain MC. Nitrazepam for refractory infantile spasms and the Lennox-Gastaut syndrome. *J Child Neurol.* 1996 Jan;11(1):31-4. PubMed PMID: 8745382.

² Wyllie E, Wyllie R, Cruse RP, Rothner AD, Erenberg G. The mechanism of nitrazepam-induced drooling and aspiration. *N Engl J Med.* 1986 Jan 2;314(1):35-8. PubMed PMID: 3940315