RECTAL DIAZEPAM VERSUS RECTAL SODIUM VALPROATE IN MANAGEMENT OF ACUTE SEIZURE IN CHILDREN

Thesis
Submitted for Partial Fulfillment of
Master Degree in Pediatrics

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2014

دراسة مقارنة بين الديازيبام و فالبروات الصوديوم عن طريق الشرج لعلاج التشنجات الحادة لدى الاطفال

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بكالوريوس الطب والجراحة
كلية الطب - جامعة الأزهر
٢٠٠٦

توطئة للحصول على درجة الماجستيرفي طب الأطفال

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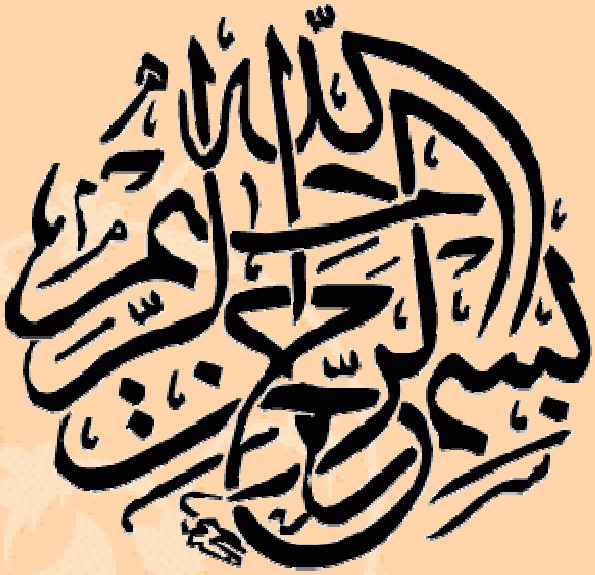
٢٠١٤



" قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ "

صدق الله العظيم

البقرة الآية ٣٢

Acknowledgement

First and foremost, I feel always indebted to Allah, the Most beneficent and merciful.

I wish I could express my most sincere thanks, deep respect and appreciation to *Prof. Dr. Mohammed Sayed Hemeda,* Professor of pediatrics , Faculty of Medicine, Al Azhar University for his help and professional guidance in the supervision and careful review of the work.

I would like to thank and express my gratitude to *Prof. Dr. Mohsen Taha El-Keiy,* Professor of pediatrics. Faculty of Medicine, Al Azhar University. For his supervision, great support and careful review of the work.

I would like to express my deeply thankful *to* *Prof. Dr. Kamel Soliman Hammad,* Assistant Professor of Clinical Pathology. Faculty of Medicine, Al Azhar University for his support during preparation of this work.

I would like also to thank all doctors who supported me during this work.

Finally my deep thanks to my patients and their parents who helped me to complete this study.

Dedication

TO MY FAMILY

AND

TO ALL SUFFERING

CHILDREN.

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LIST OF ABBREVIATIONS

ACTH	**Adreno corticotrophic hormone**
AED	**Antiepileptic drugs**
BPEC	**Benign partial Epilepsy with Centrotemporal**
CPS	**Complex partial seizures,**
CRH	**Corticotrophin-releasing hormone**
CSWS	**Continuous spike-and-wave during sleep**
CT	**Computed tomography**
CTN	**Corticothalamic neuron hormone**
EEG	**Electroencephalography**
FMRI	**Functional MRI**
GABA	**Gamma amino butyric acid**
GEFs	**Generalized epilepsy with febrile seizures**
GTCs	**Generalized tonic-clonic seizures**
ICU	**Intesive Care Unite**
LKS	**Ladau-Kleffner syndrome**
LP	**Lumbar Puncture**
ME RRF	**Myoclonic epilepsy with ragged-red fibres**
MEG	**Magnetoencephalography**
MRI	**Magnetic resonance imaging**
PET	**Positron Emission Tomography**
RBRF	**Rostral brain-stem reticular formation**
RTN	**Reticular thalamic nucleus**
SPECT	**Single-Proton Emission Computed Tomography**
SPS	**Simple partial seizures**
VAP	**valporic acid**

ABSTRACT

Background: A Seizure is a paroxysmal, time-limited change in motor activity and/or behavior that results from abnormal electrical activity in the brain. Convulsions are motor form of the seizure. Seizures are the most common medical problem requiring emergency medical intervention in pediatric patients.The aim of this study was to compare the effect of rectal diazepam and rectal Sodium valproate in controlling acute convalsions.

Methods: In this cross sectional study 100 children with mean age 32.48 ± 28.75 months in diazepam group and 39.28 ± 33.66 months in Sodium valproate group were presented with acute attack of convulsions and were randomly selected and divided into two groups to receive rectal diazepam and rectal Sodium valproate. The effect of the two drugs were compared in controlling convulsions.

Results: In 82 percent of children treated with rectal diazepam, the convulsions were controlled within median time **4** minutes, while in 70 percent of those receiving Sodium Valproate, the convulsions were completely controlled within median time **8** minutes**. (Pvalue 0.0001)**

Conclusion: The rectal diazepam was more effective than rectal Sodium valproate for controlling acute convulsions.

INTRODUCTION

Convulsion is an episode of abnormal involuntary contraction of the muscles. Convulsion rarely last more than a few minutes and are extremely different in their manifestations. It occur when brain cells become too active and disorganized in their electrical properties. The seizure characteristics are determined by the site of origin of the abnormal brain discharge and the rapidity and extent to which the discharge spreads throughout the rest of the brain. ***(Kaushansky et al., 2010)***

Convulsive seizures occur in a variety of conditions and diseases involving the nervous system and other organs of the body. In some individuals who is experiences recurring seizures the exact nature of the underlying disease is not known, while in others, seizures have been associated with tumors, blood vessel abnormalities, disturbances in brain metabolism, brain scars, and other conditions. Traditionally, the term "epilepsy" is being used to describe the illness suffered by those with recurrent seizures. ***(Wilson et al., 2008)***

Grand-mal seizure is one of the most common type of seizure. During an attack there is a loss of consciousness, tongue biting, and urinary and faecal incontinence. There is also temporary cessation of breathing which causes bluish tinge of the skin followed by irregular snoring-like breathing. Gradually the patient relaxes, his breathing becomes normal, and he regains consciousness. Afterwards he may be confused, have headaches or gastric disturbances, or fall asleep. The attack may last from less than a minute to 10 minutes, but the post-seizure phrase may last for hours. Grand mal seizures may occur as often as several times a day or as infrequently as once every few years.

Sometimes, they occur so close together that the patient does not regain consciousness between attacks. ***(Wilson et al., 2008)***

Petit-mal seizure is a different kind of seizures (not a minor form of grand mal). Petit mal attacks usually occur in childhood and rarely persist after the age of 20 years. This attack is characterized by a sudden brief lapse of consciousness with or without minor movements of the eyes, head, or extremities, there may also be dropping of the head and on occasion, urinary incontinence. The attack lasts from 5 to 30 seconds after which the patient is alert and able to continue his normal activities. Despite their high frequency, attacks rarely occur.***(Kaushansky et al., 2010)***

Psychomotor seizure is characterized by a change in behavior and perception. Usually there is a clouding of the mind, total amnesia, and automatic movements during an attack. The movements are simple and brief, such as clamping the hands or smacking the lips, but they may also take the form of more complex behavior such as getting out of a chair and walking across a room. Aggressive behavior occasionally occurs, but rarely are violent acts committed. Attacks usually last 2 to 3 minutes and there may be a short of confusion afterward. ***(Vaughn et al., 2000)***

When the attack is limited to one segment or function of the cerebrum, the term focal itself is applied, manifestations is directly related to the part of the brain involved. The convulsive movements usually begin in a finger and spread to the rest of the hand, the arm, the face, and the leg. If these movements spread to the opposite side of the body, the person loses consciousness and a grand mal attack may occur. ***(Kaushansky et al., 2010)***

The treatment of convulsive seizures consists of eliminating the causative factors (if they are known) and administering anticonvulsant drugs. Anticonvulsant drugs suppresses the abnormal electrical activity of the brain regardless of the underlying cause. With appropriate treatment, most individuals suffering convulsions are able to lead normal and productive lives. ***(Vaughn et al., 2000)***

As effective termination of the attack usually needs iv line which is usually difficult to find during the acute attack.so,other route of administration are tried.

Diazepam given rectally may be helpful in treating prolonged convulsions outside and within hospital when intravenous injection is not possible. A rectal dose of 0.5 mg/kg (maximum 10 mg) of injectable diazepam, undiluted can stop seizures in up to 80% of children. Injury to the rectum is possible with rectal diazepam injection but the risk is small with the soft plastic tube. ***(Jill Bicknell et al. ,2010)***

Sodium Valproate syrup may also be used and given rectally (20 mg/kg) diluted with equal volume of water through rectal tube. ***(Mahmoudian et al.,2006)***