

Original Research Article

STUDY ON MEDICAL AND DENTAL MANAGEMENT OF 6 TO 15 YEARS EPILEPTIC CHILDREN IN JAGDALPUR, CHHATTISGARH

Ganesh R. Kumeti¹, Mastan Shaik², Dhannuram Mandavi³

¹Associate professor, Department of Dentistry, pt. JNM Medical College Raipur, Chhattisgarh, India.

²Associate professor, department of Dentistry, LTBRKM Govt. Medical College, Jagdalpur, Chhattisgarh, India.

³Associate professor, department of Paediatrics, LTBRKM Govt. Medical College, Jagdalpur, Chhattisgarh, India.

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Corresponding Author:

Dr. Dhannuram Mandavi,
Associate professor, department of
Paediatrics, LTBRKM Govt. Medical
College, Jagdalpur, Chhattisgarh, India.
Email: drdhannurammandavi@gmail.com

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ABSTRACT

Background: Epilepsy is a neurological disorder characterized by recurrent seizures due to abnormal electrical activity in the brain. These seizures can vary in severity and type, affecting different parts of the brain and leading to a wide range of symptoms. Managing epilepsy in children aged 6 to 15 years requires a multi disciplinary approach that includes both medical and dental considerations. This age group is critical for cognitive and social development, making effective management is essential to support their overall wellbeing. The medical and dental management of epileptic children requires a thorough understanding of their unique needs and the seizure prevention and management strategies that apply to them.

Materials and Methods: In the pediatric and dental departments of the government medical college and hospital in Jagdalpur, Chhattisgarh, a cross-sectional observational study was conducted. The study involved 65 individuals in total. The parents of each participant also provided information, including general medical and dental data. The medical data included information about the type of epilepsy, the frequency of seizures, treatment plans, and any dietary interventions. The questionnaire and medical records were used to collect the medical data. The oral health status was evaluated through clinical examinations that prioritized gingival health, dental caries, and any signs of medication side effects.

Results: Just 18 of the 65 patients had dental work done; the remaining 40 had phenytoin treatment, 15 received phenytoin and levetiracetam treatment, and 10 received a combination of phenytoin, valproate, and levetiracetam treatment.

Conclusion: It is important to pay close attention to the dental and medical needs of children with epilepsy who are between the ages of 6 and 15 in order to promote their overall health and quality of life. Through the integration of dental and medical care, we can better support their overall health and wellbeing.

Keywords: Epilepsy; Children, Management.

INTRODUCTION

The Greek word "take" meaning to seize is where the name "epilepsy" originates. Hippocrates lived between 400 BC and 260 AD. Epilepsy is a sign of an underlying brain condition rather than a disease in and of itself. About 5% of people have mental sub normality, and it affects 0.5% to 1% of the population overall. Its frequency is 5.59 per 1000

persons in impoverished nations like India and 5-7 per 1000 people in wealthy nations. The number of Americans with active epilepsy exceeds 1.5 million. About 25% of athetoid patients and 50% of spastics have it. Children are more likely than adults to experience seizures, although this also includes children who experience convulsions accompanied by a fast increase in body temperature.^[1]

Epilepsy is a disease that involves seizures which are characterized by an alteration of perception, behavior and mental activities, as well as by involuntary muscle contractions, temporary loss of consciousness and chronic changes in neurological functions that result from abnormal electrical activity in the brain. Seizures caused by epilepsy can be stopped and occur often.^[2]

Exactly like any other fit, an epileptic fit is managed in the same way. Before the fit, the person having the fit may experience an aura—a sound, taste, smell, or sensation—that they recognize as a sign of an impending seizure. This can frequently provide them with enough time to drop to the ground and call for assistance. Recurring seizures typically follow a similar pattern, which helps to make the fits somewhat predictable. Dentists should make sure they have their patients' most recent medical records, which include information on any medication they may be taking to assist control their seizures.^[3]

According to Karolyhazy et al.'s epidemiological study, epileptic patients' dental health is noticeably worse than that of healthy individuals. Because of their socioeconomic status, oral cavity injuries, and poor oral hygiene, these patients have a high index of dental illnesses. Approximately 50 million individuals worldwide suffer from epilepsy, with 90% of those affected living in poor nations. It is a collection of numerous seizure types that vary in terms of severity, aspect, cause, consequence, and treatment.^[4]

AEDs, or antiepileptic medications, constitute the cornerstone of care. Although "antiseizure" would be a more accurate term given that these treatments reduce the symptoms (seizures) rather than the underlying condition, "antiepileptic" matches traditional language. AED therapy aims to minimize drug toxicity and maximize seizure control in order to provide the highest possible quality of life. With AEDs, about two thirds of epileptics experience no more seizures; however, the response varies depending on a number of criteria, such as the etiology, epilepsy syndrome, and frequency of seizures prior to therapy.^[5]

MATERIALS AND METHODS

A cross sectional observational study conducted in pediatric and department of government medical college and hospital jagdalpur, chattisgarh. The study was conducted for a period of one year. The total number of participants in this study was 65. The informed consent form was taken from all the participants included in this study. Data was collected from the parents of all the participants included in this study. Apart from general information both medical and dental data was collected from parents of the participants. Medical

data includes type of epilepsy, seizure frequency, treatment regimens and any dietary interventions. Used medical records and questionnaire to collect the medical data. Assess oral health status through clinical examinations focusing on gingival health, dental caries and any signs of medication side effects. Utilized standardized dental assessment forms and questionnaire for parents/ guardians regarding their Childs oral hygiene practices and dental visits. Assessment tools for medical management includes: structured questionnaire to evaluate treatment adherence, seizure frequency, and overall control of epilepsy. For dental management includes: employed indices such as DMFT (Decayed, Missing and Filled teeth) index and gingival index to quantify oral health status. Statistical software was used to analyze the collected data. Performed descriptive statistics to summarize demographic information, medical management practices and dental health outcomes Utilized inferential statistics (t –test) to explore relationships between seizure control and oral health status.

Inclusion Criteria

- Children aged 6 to 15 years diagnosed with epilepsy.
- Parents or guardians providing informed consent.

Exclusion Criteria

- Children with other significant neurological disorders or serious co morbidities affecting dental health.

Statistical Analysis: The gathered information was put into a Microsoft Excel spreadsheet, which was then exported to the data editor of SPSS Version 20.0.

RESULTS

Table 1 shows etiology of epilepsy. Of the 65 participants, 40 had epilepsy as a result of developmental delay, 10 as a result of cerebral palsy, 8 as a result of encephalitis, and 7 as a result of seizures. [Table 1]

Table 2 shows factors effecting epilepsy. Out of the 65 participants, 20 had improper medication use, 30 had electrolyte imbalance, 10 had hormonal abnormalities, and 5 had low blood sugar. [Table 2] Out of 65 participants, 40 received phenytoin treatment, 15 received phenytoin and levetiracetam treatment, and 10 received a combination of phenytoin, valproate, and levetiracetam treatment. [Table 3]

Table 4 shows dental management of epilepsy. Out of 65 participants, only 18 participants undergone for dental treatment. 6 subjects went for surgical operations, 2 subjects' undergone dental trauma and 10 subjects received restorations. [Table 4]

Table 1: Etiology of Epilepsy

Etiology	Total No of Subjects
Developmental Delay	40
Cerebralpalsy	10
Encephalitis	08
Febrile Seizures	07

Table 2: Factors Affecting Epilepsy

Factors Affecting Epilepsy	No of Subjects
Incorrect Use Of Medications	20
Electrolyte Imbalance	30
Harmonal Changes	10
Low Blood Sugar Levels	05

Table 3: Medical Management of Epilepsy

Management	No of Subjects
Phenytoin	40
Phenytoin +Levetiracetam	15
Phenytoin + Valproate+ Levetiracetam	10

Table 4: Dental Management of Epilepsy

Dental Procedures	No of Subjects	Management
Surgical Procedures	6	Conscious Sedation Nitrous Oxide Include Iv Benzodiazepine
Dental Trauma	2	Combination Of Probiotic Drug
Restorations	10	Cosmetic Material For Anterior Teeth.

DISCUSSION

Treatment decisions for the majority of epileptic children are significantly influenced by early identification of these four primary etiological and prognosis categories. Benign focal epilepsies, such as benign Rolandic epilepsy (20–30%), belong to the first group. Treatment is typically avoidable and remission happens after a few years. The second category comprises children with pharmacosensitive epilepsies, such as the majority of individuals (30%) who have absence epilepsy, where seizure control can be readily established with ETS or VPA and spontaneous remission happens after a few years. A subset of symptomatic focal epilepsies will respond to treatment, such as in the case of juvenile myoclonic epilepsy, which is best treated with VPA, and the third type of epilepsies, known as pharmacodependent epilepsies (20% of patients), in which drug treatment will control seizures but no spontaneous remission occurs.^[6]

Due to the fact that many epileptic children use long-term, potentially sugar-containing drugs and that some of them also have mental or motor disorders, it can be challenging for these kids to maintain excellent dental hygiene. Compared to the general population, epileptics have poor periodontal health and a high rate of cavities. Therefore, persons with epilepsy need to receive regular dental treatment. Merely 5% of the children in the research group had previously visited a dentist for a dental examination. Gurbuz and Tan, Karolyhazy et al., Ogunbodede et al., and Karolyhazy et al. have all reported lower dental visit frequencies.^[7]

People with a wide range of socioeconomic, educational, environmental, and other factors influencing their healthcare experience epilepsy. In

contrast to individuals without epilepsy, patients with epilepsy may need to address medication-related soft tissue side effects in their mouth and restore any tooth damage brought on by seizure-related trauma.

The construction of a dental prosthesis intended to reduce the possibility of future tooth injury or displacement must be taken into account when planning dental therapy. Along with receiving the appropriate education and instructions in oral hygiene, the epileptic patient should also be made aware of the connection between their general health and mouth health.^[8]

Sometimes, recurrent seizures are just the most obvious sign of a neurological condition that can possess subtle, long-lasting impacts on cognitive and behavioral functioning. This aspect of childhood epilepsy has only really come to light recently. Its identification and separation from all other variables (underlying brain pathology, psychosocial issues, and adverse drug reactions) necessitate a completely new approach from traditional seizure therapy and mark a significant shift in the way that epilepsy is understood. Although it is typically covered in the literature under the general heading of psychosocial variables, the two issues are not the same. Here, rather than with basic motor, sensory, or vegetative.^[9]

Considerations to Be Made When Giving Therapy

A thorough medical history should be taken from the patient prior to starting any treatment. Information such as the frequency of seizures, the date of the patient's most recent seizure, the patient's state of awareness and breathing during a seizure, the patient's physical state following a seizure, and whether an aura occurs prior to seizures should all be covered.

Whether an aura always precedes a seizure, what causes seizures, and whether status epilepticus exists? Stress-inducing variables should be removed prior to beginning treatment because stress is one of the main things that cause seizures. Early morning hours are best for the patient's appointment; brief therapy sessions are advised; and abrupt stimulants, like flashing bright lights, should be avoided.^[10]

CONCLUSION

The medical and dental management of epileptic children aged 6 to 15 years is crucial for promoting their overall health and quality of life. Effective medical management through appropriate antiepileptic medications, regular monitoring and dietary interventions plays a vital role in controlling seizures and minimizing their impact on daily activities. Equally important is the dental management aspect, which addresses the unique oral health challenges these children may face, such as gingival hyperplasia and dry mouth due to medication side effects. Regular dental visits, preventive care, and tailored strategies for anxiety management contributes significantly to maintaining optimal oral health. Integrating medical and dental care we can better support the health and quality of life of children with epilepsy, addressing both their neurological and oral health needs effectively. Collaboration between healthcare providers, caregivers, and dental professionals ensures a

comprehensive approach to managing the complexities of epilepsy in children. This integrated care not only enhances their medical and dental outcomes but also supports their emotional and social development, enabling them to thrive in their formative years.

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