

Prevalence of gingival hyperplasia in epileptic patient under treatment

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الخلاصة

خلفية عن الموضوع: الصرع هو اضطراب عصبي الأكثر شيوعاً التي تؤثر على ٥٠ مليون شخص في جميع أنحاء العالم، ٨٥٪ منها تنتمي إلى البلدان النامية. تحدث حوالي ٢.٤ مليون حالة جديدة كل عام على مستوى العالم.

المرضى والطرق: يتكون أفراد العينة ٤٠ مرضى الصرع، وسجلت المظاهر عن طريق الفم. **النتائج:** تم العثور على تضخم اللثة في ٥٢٪ من عينة المرضى، لا علاقة كبيرة في العمر، والجنس، ومدة العلاج.

الاستنتاج: الصرع يعوق نوعية الحياة عموماً، والصحة العامة وخدمات طب الأسنان. ومن الضروري أن يكون طبيب الأسنان على علم جيد من درجات مختلفة من الصرع، مما عجل عوامل المضبوطات والآثار الجانبية عن طريق الفم من مختلف العقاقير المضادة للصرع التي يحددها الأطباء.

Abstract

Background: Epilepsy is the most common neurological disorder affecting 50 million people world-wide, 85% of which belong to the developing countries. Around 2.4 million new cases occur every year globally

Patients and Methods: The sample population comprised 40 epileptic patients, oral manifestation was recorded.

Results: Gingival hyperplasia was found in 52% of the patient sample, no significant relation to age, gender, and duration of treatment.

Conclusion: Overall quality of life, general and dental health is hampered by epilepsy. It is imperative that dentists should be well aware of the different grades of epilepsy, precipitating factors for seizures and oral side effects of different Anti-epileptic drugs being prescribed by medical practitioners.

Keywords: Epilepsy, gingival hyperplasia

Introduction

Epilepsy is the most common neurological disorder affecting 50 million people world-wide, 85% of which belong to the developing countries. Around 2.4 million new cases occur every year globally. At least 50% of the epileptic cases begin at childhood or adolescence^[1]. Sudden onset may also

be seen in geriatric population (people above the age of 65)^[2]. Epileptic people are two or three times more likely to die prematurely when compared to a normal person^[1]. Hence, study of epilepsy has always been an utmost importance in the biomedical field of research. Epilepsy is a chronic brain disorder, characterized by seizures, which can affect any person at any age. It is

characterized by recurrent convulsions over a time-period. The episodes may vary as low as once in a year to frequent fits occurring several times per day. Epilepsy and seizure disorders are not the same; in other words all the seizures are not epileptic fits. Epilepsy is characterized by unprovoked seizures due the involvement of the central nervous system. It is due to the process of 'epileptogenesis'^[3] where normal neuronal network abruptly turns into a hyper-excitable network, affecting mostly the cerebral cortex. It is therefore highly unpredictable and its risk is much immeasurable. On the other hand, non-epileptic seizure disorders could be due to several measurable causes, such as stroke, dementia, head injury, brain infections, congenital birth defects, birth-related brain injuries, tumors and other space occupying lesions. The resulting type of epilepsy is called as secondary or symptomatic epilepsy. For secondary epilepsy, preventive measures can be adopted according to the various causes. It is interesting to note that for more than 60% of cases, no definite cause can be ascertained. This broader type of epilepsy is known as idiopathic or primary epilepsy. It is therefore not preventable, but treatable with antiepileptic medications. gingival overgrowth or enlargement occurs in whole or in part from systemic drug use. It occurs as a side effect following the administration of drugs used mainly for non-dental treatments and thus, the overgrowth cannot be explained as a variation of the intended pharmacological action of the drug^[4]. Several factors namely; age, genetic predisposition, presence of preexisting

plaque, and gingival inflammation influence the relationship between the drugs and gingival tissue^[5].

Materials and Methods

Forty patients taking Tegretol in regular doses for less than 1 year participated in the study. The epileptic patients were diagnosed according to the criteria used in the department of neurology in Al-Yarmouk teaching hospital by neurologist specialist; depending on the health history and examination findings, laboratory work may be ordered, this might include blood studies and special testing such as electroencephalogram (EEG), Computed tomography (CT), Magnetic resonance imaging (MRI), because EEG procedures usually performed between seizures, they were examined from the period (1/2/2016--20/2/2016) to detect the prevalence of gingival hyperplasia.

Exclusion criteria

- Newly diagnosed patients not receiving treatment.
- Patients with periodontal disease, and any other systemic disease that may cause the same oral manifestation in which the study is about.

All the patients examined by a single examiner under standardized conditions, the procedure of examination was done in sequence according to the directions suggested by the W.H.O.(1987).

Statistical Analysis

Data are analyzed through the use of SPSS (Statistical Process for Social Sciences) version 23.0 application Statistical analysis system, Excel (Statistical package) and Microsoft word.

Results

Prevalence of gingival hyperplasia according to age, gender, and duration of treatment

As shown in (table 1) the results showed no significant relationships between age, gender, and duration of treatment and the prevalence of gingival hyperplasia.

Of the 40 patients examined, 21 patients were found to have gingival hyperplasia, 19 patients did not.

Oral manifestation	Variable	Pearson Correlation
Gingival Hyperplasia	Age	0.203 NS
	Gender	0.781 NS
	Duration of treatment	0.959 NS

Discussion

In this study attempts have been made to assess oral health status of epileptic patients, the study had two limitations, first we could not use x-ray imaging, and the second was the lack of literature on the subject at a country level for comparisons and discussion purposes. Anti-convulsant drugs can cause pathological changes in the mouth, the patient may have following signs and symptoms dry mouth, irritation, or soreness of the tongue and mouth, red irritated or bleeding gums, and swelling of the face, lips, or tongue.^[6,7,8,9]

Dentist's frequently come across epileptic patients in their practice. In fact Chapman et al has reported it to be the second most medical condition to be seen in dental operatory. Overall

prevalence of epilepsy in general population is 0.9%.^[10]

Gingival over growth was seen as a common side effect of the antiepileptic drugs in 46% of patients. Presently, the etiology of drug-induced gingival overgrowth is not clear but it is multifactorial. Also, the effect of age, sex, duration and dosage of the drug in the pathogenesis of gingival overgrowth is not clearly understood.^[11]

Singh NA et al has found a positive correlation between decreased level of serum folate and increasing severity of gingival enlargement due to consumption of antiepileptic. They have even come to the conclusion that reduced serum folate level can even lead to early onset of oral side effects of antiepileptics.^[12]

This observation shows that immune-like mechanisms can be triggered in CNS by seizures, thus challenging neuroscience research to investigate in more detail the mechanisms underlying this activation and its functional consequences. Whether immune responses that take place in epileptic saliva is beneficial or noxious to the patient is still an open and intriguing question that should be addressed by further investigation.

Key open questions include whether those pro-inflammatory signals represent a more epiphenomena or if they are significantly involved in the etio-pathogenesis of seizures, and possibly contribute to epilepto-genesis.

Conclusion

Overall quality of life, general and dental health is hampered by epilepsy. It is imperative that dentists should be well aware of the different grades of

epilepsy, precipitating factors for seizures and oral side effects of different AED being prescribed by medical practitioners.

Further studies can be undertaken to evaluate the oral side effect of each AED, based on the dosage and the time duration of which the drug is being taken. Studies can also be undertaken to evaluate caries, periodontal and oral hygiene status in Epileptic children.

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