

Improved anorgasmia following add-on lamotrigine treatment

Seyede Maryam Naghibi¹; MD , Seyed Hamzeh Hosseini^{2*}; MD 

¹Psychosomatic Medicine Fellowship, Department of Psychiatry, Psychiatry and Behavioral Sciences Research Center, Mazandaran University of Medical Sciences, Sari, Iran.

²Department of Psychiatry, Psychiatry and Behavioral Sciences Research Center, Mazandaran University of Medical Sciences, Sari, Iran.

Abstract

Sexual dysfunction is common after using antiepileptic drugs, and anorgasmia can occur as a treatment-emergent adverse event. The positive effect of lamotrigine on improving anorgasmia in epilepsy patients has been reported in a few studies. Anorgasmia is a common manifestation in epileptic patients. Anorgasmia or ejaculation without achieving orgasm is permanent or recurrent, happening despite adequate stimulation. The current paper presented a 31-year-old male with epilepsy since early childhood who received carbamazepine and phenobarbital. He experienced anorgasmia, and by switching to valproate sodium, the seizures and anorgasmia were somewhat improved. However, both problems were completely resolved after receiving lamotrigine. An 18-month follow-up did not reveal any particular issue. Lamotrigine can be recommended alongside other antiepileptic drugs in patients who have cure-induced anorgasmia. Considering the improvement of anorgasmia and reduced number of seizures, long-term follow-up is recommended.

Keywords: Epilepsy, Sexual dysfunction, Anorgasmia, Lamotrigine

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1. Introduction

Sexual dysfunction in epilepsy patients was reported in some studies in the 1950s (1, 2), and its prevalence in epileptic patients was estimated to be more than 66% (3,4). Male patients with epilepsy are believed to encounter a higher incidence of sexual dysfunctions (40-70%) than healthy males (5). Duncan et al. compared sexual function in 69 epilepsy males who received an antiepileptic medication and 50 controls. They found that patients had more erectile dysfunction and lower libido (1). Sexual dysfunction includes a wide range of disorders such as low sexual desire, dyspareunia, erectile dysfunction, and lack of sexual gratification that affects the quality of life

in epilepsy patients (6). The etiology of sexual dysfunction is multifactorial. However, three main causes are proposed, including epilepsy, antiepileptic treatment, and psychological problems (5). Recurrent seizures, the cause of epilepsy, antiepileptic drugs, and underlying psychological disorders could lead to sexual dysfunction (6).

Anorgasmia is a common manifestation in epileptic patients (7). Anorgasmia or ejaculation without achieving orgasm is permanent or recurrent, happening despite adequate stimulation. The ACSF and the National Health and Social Life Survey (NHSLs) have estimated 14% and 8% prevalence of this order in France (1993) and the USA (1999), respectively (8). Anorgasmia in epilepsy patients could stem from antiepileptic treatments, including phenytoin, carbamazepine, and barbiturates. In a study by Calabro et al., pregabalin as add-on therapy caused severe anorgasmia

Corresponding Author: Seyed Hamzeh Hosseini, Department of psychiatry, Psychiatry and Behavioral Sciences Research Center, Mazandaran University of Medical Sciences, Sari, Iran
Email: mahlahosseini318@gmail.com

Table 1. AED-related sexual dysfunction (Calabrò et al ., 2013).

Compounds	Sexual side effects
Old AEDs	
Enzyme-inducing AEDs (carbamazepine, phenytoin, phenobarbital)	hyposexuality, erectile dysfunction, delayed ejaculation, anorgasmia
Valproic acid	retrograde ejaculation
New AEDs	
Topiramate	erectile dysfunction, anorgasmia
Oxcarbazepine	anorgasmia, ejaculatory failure, retrograde ejaculation
Lamotrigine	hypersexuality
Levetiracetam	loss of libido, hypersexuality
Zonisamide	erectile dysfunction
Gabapentin	anorgasmia
Pregabalin	erectile dysfunction, delayed ejaculation, anorgasmia

in three men with epilepsy (9). In addition to anorgasmia, these drugs could cause erectile dysfunction and low sexual desire, so switching to other medications could help improve these disorders (6,9) (Table 1).

Lamotrigine is an antiepileptic drug that could contribute to improving sexual functioning in male epileptic patients (10) and changing to lamotrigine was found to be even more favorable in some studies (3, 6, 10). However, the effect of this drug in improving anorgasmia in epilepsy patients is just reported in one study (3). The current paper presented a male patient who had anorgasmia after using antiepileptic medicine. He was completely

treated with lamotrigine.

2. Case presentation

A 31-year-old male with mild intellectual disability who had seizures following fever (febrile convulsion) for nine months was diagnosed with grand mal epilepsy and received antiepileptic treatments. He had a special school education. Despite taking carbamazepine 200 mg and phenobarbital 100 mg daily, the seizure was not fully controlled, and he suffered seizures at least once a week. The patient was married for four years and was referred to a urologist for unsuccessful sexual intercourse. Clinical examinations revealed

Table 2. Findings based on blood test.

Test	Result	Unit
FBS	79	Mg/dl
BUN	14	Mg/dl
Cearatinine	0/98	Mg/dl
AST	18	u/l
ALT	15	Iu/l
ALP	123	u/l
ESR 1hr	3	Mm/1h
Total T4	6/4	µg/dl
Total T3	0/9	Ng/ml
TSH	3/37	Mlu/ml
CRP	negative	-
WBC	4.4×103	/µl
RBC	4.92×106	/µl
HGB	16.0	g/dl
PLT	160×103	/µl

no particular problem, and Laboratory blood tests were normal (Table 2).

Urine analysis showed no sperm. Therefore, retrograde ejaculation and other physical causes were ruled out, and drug-induced anorgasmia was considered. He was referred to psychiatry for further sexual consultations. After investigations, being suspicious of the complications caused by carbamazepine and phenobarbital, they were discontinued, and the patient received valproate sodium 200 mg twice/daily (morning and evening). After two weeks, the dose was doubled (two in the morning and two in the evening). In the two-month follow-up, seizure was reduced to once every two weeks, and anorgasmia was improved (50%). The patient's wife was asked to record the information about sexual intercourse. She was an alert person with a diploma and a normal intelligence quotient (IQ). After two months, lamotrigine 25 mg/daily was used as an add-on treatment, which was increased to 50mg/daily within two weeks. The patient was followed up for 18 months, during which the anorgasmia was found to be completely resolved, and the seizure occurred two times (once due to lack of sleep and the second time because of a journey).

3. Discussion

Lamotrigine is recognized to improve sexual dysfunction caused by antiepileptic drugs, but its effect on anorgasmia was reported in just one study (3). Antiepileptic drugs such as pheno-

barbital, phenytoin, and carbamazepine are hepatic microsomal enzyme inducers that increase other medicines' metabolism and the production and breakdown of sex hormone-binding globulin (SHBG). Increased SHBG reduces free androgen and estrogen (biologically active sex hormones). In some males, sexual dysfunction occurs after long-term treatment with carbamazepine and phenobarbital, which could lead to functional testosterone levels decreasing (11). In other words, sexual dysfunction in epilepsy males could be due to being on antiepileptic drugs for a long time, resulting in increased SHBG and low free testosterone levels. However, Duncan et al. reported no association between testosterone level and sexual desire or erectile function when comparing epilepsy patients and healthy controls (1). Like Husain et al., the current study did not measure the testosterone level and SHBG (3). Husain et al. reported a 48-year-old man with epilepsy who was unsuccessfully treated with phenytoin, carbamazepine, and felbamate. Afterward, he received phenobarbital, gabapentin, and clonazepam but developed low potency and anorgasmia (3). In our case, carbamazepine and phenobarbital were ineffective in controlling epilepsy seizures, and he suffered anorgasmia. In both studies, lamotrigine as an add-on therapy (with a gradual dose increase) improved anorgasmia. The seizure occurrence was considerably reduced in the present study, while Husain et al. observed no significant improvement after adding lamotrigine (3).

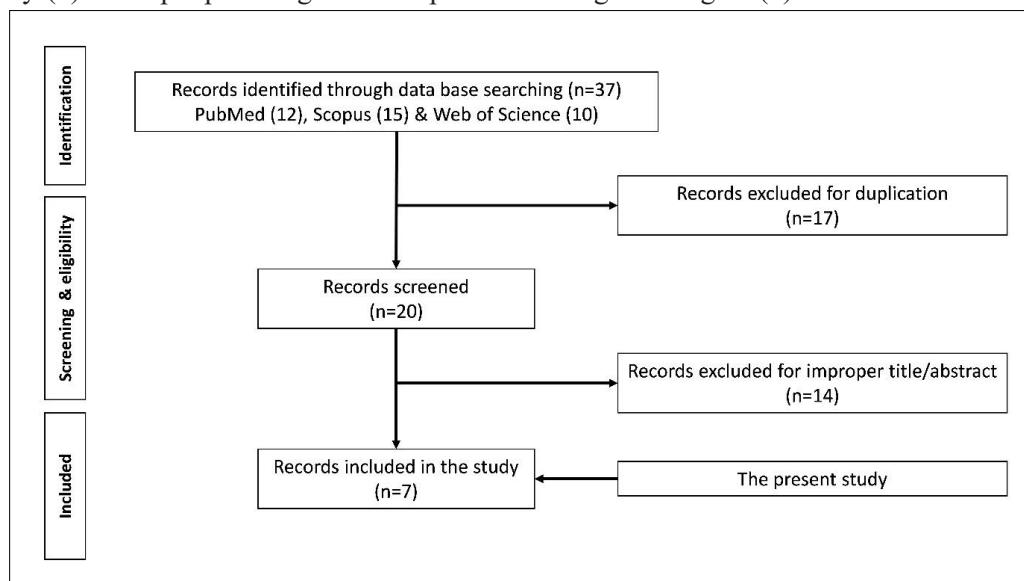


Figure 1. Study selection procedure.

No study has reported an association between using lamotrigine and reproductive endocrine disturbances neither in epilepsy men nor in nonepileptic animals (11). According to current results, lamotrigine in epilepsy males improved sexual dysfunction rather than causing any sexual dysfunction.

A further advantage of our study, compared to that of Husain et al., was our follow-up duration (18 months) in which we found complete improvement of anorgasmia. Another different feature of this study was the early onset of the seizure (9 months of age) in our case, which is believed to influence the neurohumoral control of sexual maturation (3), and lamotrigine was found

to be positively effective in improving anorgasmia. However, Husain et al. reported three patients whose seizures first occurred at 19, 18, and 32 years of age (3).

4. Conclusion

Considering both the improvement of anorgasmia and reduced number of seizures, long-term follow-up is recommended in which lamotrigine alongside other antiepileptic drugs is suggested in the treatment of patients with anorgasmia.

Conflict of Interest

The authors declare no conflict of interest.

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