

Increased sexual arousal in patients with movement disorders

Exacerbação do impulso sexual em pacientes com distúrbios do movimento

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ABSTRACT

Increased of sexual arousal (ISA) has been described in different neurological diseases. The purpose of this study was present a case series of ISA in patients with movement disorders. **Method:** Fifteen patients with different forms of movement disorders (Parkinson's disease, Huntington's disease, Tourette's syndrome, spinocerebellar ataxia type 3), were evaluated in the Movement Disorders Unit of the Federal University of Paraná. **Results:** Among Parkinson's disease patients there were seven cases with different forms of ISA due to dopaminergic agonist use, levodopa abuse, and deep brain stimulation (DBS). In the group with hyperkinetic disorders, two patients with Huntington's disease, two with Tourette's syndrome, and four with spinocerebellar ataxia type 3 presented with ISA. **Conclusions:** ISA in this group of patients had different etiologies, predominantly related to dopaminergic treatment or DBS in Parkinson's disease, part of the background clinical picture in Huntington's disease and Tourette's syndrome, and probably associated with cultural aspects in patients with spinocerebellar ataxia type 3.

Keywords: hypersexual disorder; increased of sexual arousal; hypersexuality; movement disorders.

RESUMO

A exacerbação do impulso sexual (EIS) tem sido descrita em diversas doenças neurológicas. O objetivo deste estudo foi apresentar uma série de casos de EIS em pacientes com distúrbios do movimento. **Métodos:** Quinze pacientes com diferentes formas de distúrbios do movimento (Doença de Parkinson, doença de Huntington, síndrome de Tourette, ataxia espinocerebellar tipo 3), foram avaliados na Unidade de Distúrbios de Movimento-Universidade Federal do Paraná. **Resultados:** Entre os pacientes com doença de Parkinson houve sete casos com diferentes formas de EIS devido ao uso de agonista dopaminérgico, abuso de levodopa ou estimulação cerebral profunda (DBS). No grupo com distúrbios hipercinéticos, dois pacientes com doença de Huntington, dois com síndrome de Tourette, e quatro com ataxia espinocerebellar tipo 3 apresentaram EIS. **Conclusões:** EIS nesses pacientes decorreu de diferentes etiologias, relacionadas com o tratamento dopaminérgico ou DBS na doença de Parkinson, parte do quadro clínico na doença de Huntington e síndrome de Tourette, e provavelmente relacionado com aspectos culturais em pacientes com ataxia espinocerebellar tipo 3.

Palavras-chave: transtorno hipersexual; exacerbação do impulso sexual; hipersexualidade; distúrbios de movimento.

Several neurological disorders, such as epilepsy, stroke, multiple sclerosis, dementia, and Parkinson's disease (PD), are commonly associated with sexual dysfunction¹. The DSM-5 diagnostic criteria recognize different forms of sexual dysfunction, including disorders related to sexual desire, arousal, and orgasm². Paraphilias represent a separate group of disorders, including exhibitionism, fetichism, frotteurim, and pedophilia, among others². Hypersexual disorder (HSD) is proposed as a new psychiatric disorder, defined primarily as a nonparaphilic sexual desire disorder with an impulsivity component³.

The purpose of this study is to present a case series of increased sexual arousal (ISA) in a group of patients with movement disorders (MD).

METHOD

Fifteen patients with different MD were prospectively evaluated over a 5-year period in the Movement Disorders Unit of Hospital de Clínicas, Federal University of Paraná. Patients were regularly questioned at each visit for symptoms related to sexual disorders, and those who agreed to participate in the study signed the consent form. The study was approved by the Ethics Committee of the Federal University of Paraná.

The MD were classified as either PD or hyperkinetic disorders, including Huntington's disease (HD), Tourette's syndrome (TS), and spinocerebellar ataxia type 3 (SCA3).

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Diagnostic criteria for PD were based on the Queen Square Brain Bank. Huntington's disease and SCA3 patients had genetic diagnostic confirmation. Tourette's syndrome diagnosis was made according to DSM-5² criteria. Hypersexual disorder and paraphilias were diagnosed according to Kafka³ and DSM-5 diagnostic criteria, respectively.

A total of 15 cases of ISA were identified, 13 of which were males. Mean age of patients in the group with PD (7 patients) was 66.7 years, and 39.6 years in the group of hyperkinetic disorders (4 patients with SCA3, 2 patients with HD, and 2 patients with TS).

RESULTS

We identified seven PD patients (six males) with different forms of HSD (excessive masturbation, obsessive anal intercourse preference, excessive sexual intercourse) and paraphilias (exhibitionism, and pedophilia). Dysfunctions resulted from dopaminergic agonists (DA) use (high doses of pramipexole in four of seven patients), levodopa abuse (dopamine dysregulation syndrome in one case), and after deep brain stimulation (DBS) (bilateral subthalamic nucleus in two cases).

In the group of hyperkinetic disorders, there were two patients with HD (one female patient with excessive sexual intercourse associated with mood disorder that started before the onset of motor symptoms, and one male patient, with excessive sexual intercourse, developed during follow-up). The first patient was treated with clonazepam

1mg/day with improvement and the second with olanzapine 10mg/day, with partial improvement. Two patients with TS developed severe HSD [one with excessive masturbation and one with sexual promiscuity, who later developed acquired immunodeficiency syndrome (AIDS)]. Patients received flufenazine 1.5mg/day plus clonazepam 0.5mg/day, and haloperidol 7.5mg/day, respectively. Four patients, from two families with SCA3, presented with HSD (excessive sexual intercourse) after beginning of gait ataxia. The patients presented with cerebellar phenotype of SCA3 and were not taking any dopaminergic medication. One patient was treated with buspirone 15mg/day, with improvement of symptoms, and the other one, which also showed improvement of the disorder, conducted monitoring in a psychotherapy service during an extended period. Clinical data of these patients are described in table 1.

In general, most patients improved of HSD and paraphilias after reduction of dopaminergic drugs doses (DA and levodopa), DBS parameters correction and use of typical and atypical neuroleptics (Table 2).

DISCUSSION

In patients with PD, non-motor symptoms including depression, anxiety, apathy, sleep disorders, loss of libido, and erectile dysfunction are common. Sexual dysfunction in PD contributes to poor quality of life⁴. Hypersexual disorders occur in patients with PD due to impulse control disorders (ICD), a complication of dopaminergic therapy,

Table 1. Increased sexual arousal in a group of movement disorders patients.

Patient	Age/Gender	Disease	Scales	Treatment	ISA	Follow-up
1	67/M	PD	HY = II	DA	Annal intercourse	Improvement
2	57/M	PD	HY = II	Levodopa (high doses)	Excessive sexual intercourse	Partial improvement
3	58/M	PD	HY = II	DA	Excessive masturbation	Improvement
4	65/M	PD	HY = III	DBS	Excessive sexual intercourse	Improvement
5	64/M	PD	HY = III	DBS	Excessive sexual intercourse	NR
6	81/F	PD	HY = III	DA	Exhibitionism	Improvement
7	75/M	PD	HY = III	DA	Pedophilia	Improvement
8	58/F	HD	YGTSS (intensity subscale) = 3	Clonazepam	Excessive sexual intercourse	Improvement
9	55/M	HD	YGTSS (intensity subscale) = 4	Olanzapine	Excessive sexual intercourse	Partial improvement
10	38/M	TS	UHDRS (motor) = 20	Flufenazine, Clonazepam	Sexual promiscuity	AIDS
11	22/M	TS	UHDRS (motor) = 15	Haloperidol	Excessive masturbation	Sudden death
12	35/M	SCA3	SARA = 11	Buspirone	Excessive sexual intercourse	Improvement
13	34/M	SCA3	SARA = 7	-	Excessive sexual intercourse	NR
14	36/M	SCA3	SARA = 13	-	Excessive sexual intercourse	NR
15	39/M	SCA3	SARA = 7	-	Excessive sexual intercourse	Improvement

M: Male; F: Female; PD: Parkinson's Disease; HD: Huntington's disease; TS: Tourette's syndrome; SCA3: Spinocerebellar Ataxia type 3; HY: Hoehn&Yahr Scale; YGTSS: Yale Global Tourette's Syndrome Scale; UHDRS: Unified Huntington's Disease Rating Scale; SARA: Scale for the Assessment and Rating of Ataxia; DA: Dopaminergic agonist; DBS: Deep Brain Stimulation; ISA: Increased Sexual Arousal; NR: not reported; AIDS: Acquired Immune Deficiency Syndrome.

Table 2. Dopaminergic adjustment in Parkinson's disease patients with increased sexual arousal.

Patient	Initial treatment	Initial dose	Final dose	Follow-up
1	DA	Pramipexole 4mg/day	Levodopa 800mg/day + Entacapone 800mg/day	Improvement
2	Levodopa	Levodopa 1800mg/day	Levodopa 800mg/day	Partial improvement
3	DA	Pramipexole 4,5mg/day	Levodopa 800mg/day + Entacapone 800mg/day	Improvement
4	DBS	-	-	Improvement
5	DBS	-	-	NR
6	DA	Pramipexole 4mg/day	Levodopa 800mg/day + Entacapone 800mg/day	Improvement
7	DA	Pramipexole 5mg/day	Levodopa 800mg/day + Entacapone 800mg/day	Improvement

DA: Dopaminergic agonist; DBS: Deep Brain Stimulation; NR: not reported.

particularly when DA and levodopa are used. Therefore, an excessive stimulation of dopamine receptors may be the cause of HSD in PD⁴. Rarely, HSD can be related to DBS in the subthalamic nucleus. In our case series of patients with PD and ISA we observed these complications associated with DA use, levodopa (typically in high doses), and DBS in the subthalamic nucleus. The most common HSD were excessive sexual intercourse, excessive masturbation, and the unusual preference for anal intercourse⁵. Two kinds of paraphylia were observed: exhibitionism and pedophilia. In general, after dose reduction of dopaminergic drugs and DBS parameters changes, most patients improved HSD and paraphylia.

On the other hand, in the group of patients with hyperkinetic disorders and ISA, the most common abnormalities were related to the disease or a probable psychological factor. Two patients with HD presented excessive sexual intercourse, in one of them, previous to the development of the motor symptoms. In fact, symptoms of HSD were described by Professor Américo Negrette, a Venezuelan neurologist, in high frequency, in his seminal clinical contribution about HD⁶. Additionally, other publications about sexuality in HD, have demonstrated hypoactive sexual disorders⁷. In conclusion, psychosocial factors or specific brain lesion could be the cause of sexual dysfunction in patients with HD⁸.

Two patients with TS presented with HSD, with excessive masturbation and sexual promiscuity. In addition to the symptoms of motor and vocal tics, patients with TS also have comorbid conditions, such as attention deficit hyperactivity

disorder, obsessive-compulsive disorder, impulse control disorder, and behavior disorder⁹.

Four patients with SCA3 presented with HSD. This condition was described preferentially after the confirmation of the disease by genetic tests. The main non-motor manifestations of SCA3 are sleep disorders, cognitive and affective disturbances, psychiatric symptoms, olfactory dysfunction, pain, cramps and fatigue, among others¹⁰. In general, there are no descriptions of sexual dysfunctions in the Brazilian population. One possibility to explain HSD in patients with SCA3 is psychological factors, in a Latin-American context. On the other hand, this disorder could also be explained by a fronto-striatal dopaminergic dysfunction. A recent study with [¹²³I]-FP-CIT SPECT showed asymmetrical involvement in striatum, greater in the parkinsonian rather than the cerebellar SCA3 phenotype¹¹. Braga-Neto et al.¹² confirmed significant DAT density reduction at the striatum level among SCA3 patients compared to controls. However, no correlation was found between DAT densities with psychiatric assessment scales or neuropsychological tests¹².

In conclusion, ISA in this group of Brazilian patients with MD had different etiologies, predominantly related to the dopaminergic treatment or DBS procedure in the PD patients. In the group of HD and TS, it was probably part of the background clinical picture. In SCA3 patients, ISA was probably associated with cultural aspects.

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