ORIGINAL ARTICLE

THE PREVALENCE OF ORGASMIC DYSFUNCTION AMONG MALAYSIAN WOMEN RECEIVING ANTIDEPRESSANT: A COMPARISON BETWEEN ESCITALOPRAM AND FLUOEXETINE

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Abstract

Objective: To investigate the prevalence of Female Orgasmic Dysfunction (FOD) focusing on the orgasm domain among female patients attending PPUKM Psychiatric clinic. To compare the prevalence of orgasmic dysfunction between female patients on Escitalopram and on Fluoxetine therapy. *Methods:* A validated questionnaire for sexual function was used to assess orgasmic function. A total of 112 women aged between 24 and 57 participated in this study. The orgasmic dysfunction was compared between patients on selective serotonin reuptake inhibitors (SSRIs) fluoxetine and escitalopram. *Results:* The prevalence of female orgasmic dysfunction was 58.9% (33/56) among patients treated with Fluoxetine and 41.1% (23/56) among patients treated with Escitalopram. However, there was no statistically significant difference between these two treatment groups (p=0.059). The odds to have FOD among patients on higher dose of antidepressants was found to be higher compared to those patients who were on lower dose of antidepressants (Odds ratio 5.32, p= 0.001). *Conclusion:* There was no significant difference of Female Orgasmic Dysfunction between patients on Fluoxetine and Escitalopram. ***ASEAN Journal of Psychiatry, Vol.12 (1), Jan – June 2011: XX XX***

Keywords: Orgasmic dysfunction, Malaysian women, antidepressant treatment

Introduction

Adequate sexual expression is an essential part of human relationships. It provides a sense of physical, psychological and social well-being, which results in enriching the quality of life. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), sexual response is defined into a four-phase cycle: desire; excitement; orgasm and resolution. Disorders of the sexual response may occur during one or more of these phases [1].

Orgasm is described by Schnarch (1997) [2] as "powerful feelings" formed after a person has achieved an adequate arousal threshold, enabling a person to experience the peaking of sexual pleasure (Sidi et al., 2008) [3]. It has been shown to be associated with the release of certain hormones and neurotransmitters in the brain. Oxytocin seems to be related to orgasm and have

influence on the feelings of desire. Norepinephrine stimulates sexual arousal and vasocongestion. On the other hand, the serotonin systems act as control mechanism by suspending the vasocongestion and turning off the arousal state. The serotonin systems also diminish nitric oxide functions and reduce genital sensation [4].

The concept that serotonin may inhibit the sexual responses helps explain the reduced sexual desire and functions associated with antidepressants [5]. Sexual dysfunction is a side effect attributed to the use of selective serotonin reuptake inhibitors (SSRIs), as documented by earlier studies [4, 6-10]. The prevalence differs between each type of SSRI, ranging from 36 to 65 %. This fact may be of substantial importance with regards to compliance to long term therapy of SSRIs. According to Classification DSM-IV-TR Classification of Female Sexual Dysfunction, orgasmic dysfunction is described as delayed or absence of orgasm after a normal sexual excitement phase.

The prevalence of female orgasmic dysfunction (FOD) among western population was cited as 24% [11] and a Malaysian study on women attending the primary care clinics found a prevalence of 51.9%[3]. Other Asian countries such as Singapore, Taiwan, Korea and Japan has cited the FOD prevalence between 24 to 43% [3,12,15]. A study in United States women found that the prevalence was 21.1% [16].

In Malaysia, there have not been many studies on female sexual dysfunction associated with antidepressants and the whole area of sexual dysfunction is still largely unexplored. There are no local studies focusing on the prevalence of orgasmic dysfunction in association with SSRI. The main objective of this study is to compare the prevalence of FOD among patients on escitalopram and fluoxetine.

Methods

This was a cross-sectional study to assess and compare the prevalence of FOD associated with escitalopram and fluoxetine among female patients who attended the Psychiatric Clinic Universiti Kebangsaan Malaysia Medical Centre during the study period. It was conducted over a period of six months, from 1st June 2009 until 30th November 2009. The study subjects were female patients on escitalopram and fluoxetine who fulfilled the inclusion criteria and consented to participate in the study. Due to the limitation of time and resources, the sampling method was based on convenient sampling.

The inclusion criteria were female patients who were i) between 18 and 65 years old ii) married and have a sexually active partner, iii) able to read and understand Malay Language (the national language), iv) diagnosed with major depressive disorder (MDD) based on the fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) using Structured Clinical Interview for DSM-IV Disorders (SCID) [17], and v) in full remission (defined by DSM-IV as during the past 2 months had no significant signs or symptoms of the disturbance and Montgomery-Asberg depression rating scale (MADRS) [18] score of ≤ 10).

The exclusion criteria were patients who were i) suffering from chronic and severe medical illness ii) pregnant or within 2 months postpartum period.

The instruments used in this study were i) the sociodemographic and marital profile form, ii) Structured Clinical Interview for

DSM-IV Disorders (SCID) iii) Montgomery-Asberg Depression Rating Scale (MADRS), iv) Malay Version of the Female Sexual Function Index (MVFSFI)[19-21]. In this study, the orgasm domain of MVFSFI with the cutoff value of ≤4 for orgasmic difficulties (sensitivity = 83%, specificity = 85%) was defined as FOD.

Data analysis was performed using the Statistical Package for Social Science (SPSS) version 12.0.1 (Chicago, IL, USA). The relationships between the study parameters were analyzed using Chi-Square test for categorical variables. Independent t-test was used to compare the means of continuous variables with normal distribution, while Mann-Whitney U test was used for not-normally distributed variables. Multivariate logistic regression analysis with 95% confidence interval was used to assess the predictors of FOD.

Results

One hundred and twelve female patients who attended the Psychiatric Clinic UKMMC participated in the study. There were 56 patients on fluoxetine and 56 patients on escitalopram.

Details of the socio-demographic characteristics of the patients are shown in Table 1. The majority of the respondents who were on escitalopram were Malays (n=29, 51.8%) followed by Chinese (n=20, 35.7%) and Indian (n=7, 12.5%). In the fluoxetine group, the percentage of Malay and Chinese respondents were almost the same, (n=26, 46.4%) and (n=23, 41.1%) respectively, followed by Indians (n=7, 12.5%). Majority of the fluoxetine patients had received only secondary or below education level, (n=34, 60.7%) compared to escitalopram patients where majority (n=33, 58.9%) of them received tertiary education. Majority (n=33, 58.9%) of fluoxetine compared to only (n=18, 32.1%) of escitalopram patients were employed. A total of 34 (60.7%) of escitalopram patients had 3 or more children, as compared to fluoxetine patients, (n=20, 35.7%). For both treatment groups, the duration of marriage was about 15 years. For frequency of sexual intercourse, majority (60.7%) of the fluoxetine group had sexual intercourse only once a week or less, compared to 48.2% in the escitalopram group. More than half (78.6%) of the fluoxetine patients were pre-menopausal compared to only 14.3% in the escitalopram group. Majority (85.7%) of the patients did not smoke. However, most (87.5%) of the fluoxetine patients consumed alcohol compared to only 5.4% from the escitalopram patients.

Table 2 shows the mean dosage of fluoxetine and escitalopram prescribed were 30.71mg (SD=10.76) mg and 12.32 mg (SD=4.15), respectively. The mean duration of fluoxetine usage was 50.0 months(SD=34.37) and escitalopram was 22.7 months (SD=11.87). Based on classification by Gartlehner et al (2007) [13], majority of patients in the escitalopram group (67.9%) had lower dose antidepressants compared to fluoxetine (48.2%).

Table 1 : Sociodemographics of the 112 respondents

Variables	Treatment group					
	Fluoxetine (n=56)			Escitalopram(n=56)		
	Mean (SD)	Median (IQR)	Freq (%)	Mean(SD)	Median (IQR)	Freq (%)
Age (year)	40.3(9.37)			40.8 (8.24)		
Race						
Malay			26(46.4)			29(51.8)
Chinese			23(41.1)			20(35.7)
Indian			7(12.5)			7 (12.5)
Education						
Secondary& below			34(60.7)			23 (41.1)
Tertiary			22(39.3)			33(58.9)
Employment						
Yes			33 (58.9)			18 (32.1)
No			23 (41.1)			38(67.9)
Number of children						
< 3			36 (64.3)			22 (39.3)
≥ 3			20 (35.7)			34(60.7)
Duration of marriage (years)	14.9(9.33)			15.6(8.64)		
Frequency of sexual intercourse						
< once a week			34 (60.7)			27 (48.2)
≥ once a week			22 (39.3)			29(51.8)
Menopause			12 (21.4)			48 (85.7)
Yes			44 (78.6)			8(14.3)
No						
Smoking						
Yes			8 (14.3)			8 (14.3)
No			48(85.7)			48(85.7)
Alcohol						
Yes			7 (12.5)			53 (94.6)
No			49(87.5)			3 (5.4)

SD=standard deviation IQR=Interquartile range Freq=frequency

Table 2 Dosage and duration of antidepressant usage of the subjects

Variable	Treatment group (mean and standard deviation)	
	Fluoxetine	**Escitalopram**
Dosage (mg)	30.71 (10.76)	12.32 (4.15)
Duration of antidepressant usage (months)	50.04 (34.37)	22.70 (11.87)
Dosing classification*		
Low	27 (48.2)	38 (67.9)
High	29 (51.8)	18 (32.1)

*** Low = (≤30mg for fluoxetine or ≤ 15mg for escitalopram)**
High = (> 30mg for fluoxetine or > 15mg for escitalopram)

Table 3 shows comparison of orgasmic difficulties between patients on fluoxetine and escitalopram. A total of 33 out of 56 patients (58.9%) on fluoxetine said they had FOD, and 23 out of 56 (41.1%) patients complained that they had FOD. However, using chi-square test, the difference between these two groups was not statistically significant different ($p = 0.059$).

Table 3 Comparison of FOD among patients on Fluoxetine and Escitalopram

		Orgasmic difficulties				
		Present N (%)	**Absent N (%)**	**χ^2**	***p* value**	**OR (95% CI)**
Antidepressant						
Fluoxetine	56	33 (58.9)	23 (41.1)	3.571	0.059	2.059 (0.970-4.371)
Escitalopram	56	23 (41.1)	33 (58.9)			

OR = Odds Ratio CI = Confidence Interval

Table 4 Univariate analysis of the associated factors for female orgasmic dysfunction(FOD) based on MVFSFI

Variable	Female orgasmic dysfunction(FOD)		χ^2(df)	*p* value	OR (95% CI)
	Yes	No			
Age (years)	43.7(8.21)	37.4 (8.23)	-	<0.001*†	6.3(-9.4, 3.3)
Duration of marriage(years)	18.5(8.90)	12.0(7.81)	-	< 0.001*†	6.5 (-9.7,3,4)
Antidepressant					
Fluoxetine	33 (58.9)	23(41.1)	3.571(1)	0.05†	2.059
Escitalopram	23(41.1)	33(58.9)			(0.970-4.371)
Dosing					
Medium to high	35 (74.5)	12 (25.5)	19.394(1)	<0.001†	6.111
Low	21 (32.3)	44 (67.7)			(2.647-14.109)
Race					
Malay	22(40.0)	33 (60.0)		0.038†	2.217
Non-Malay	34(60.71)	23(39.29)	4.323(1)		(1.042-4.721)
Education					
Secondary & below	41 (61.2)	26 (38.8)	3.020(1)	0.082†	0.259
Tertiary	15 (33.3)	30 (66.7)			(0.051-1.308)
Employment					
Yes	32 (45.1)	39(54.9)	1.885(1)	0.170	0.581
No	24 (58.5)	17 (41.5)			(0.267-1.265)
No of children					
< 3	29 (41.4)	41(58.6)	5.486(1)	0.019	2.545
≥ 3	25 (64.1)	14(35.9)			(1.155-5.609)
Menopause					
Yes	16 (80.0)	4 (20.0)	8.765	0.003†	5.200
No	41 (44.6)	51 (55.4)			(1.613-16.765)
Smoking					
Yes	10 (62.5)	6 (37.5)	2.625	0.105	2.493
No	47 (49.0)	49 (51.0)			(0.805-7.723)

*Independent t-test, †p<0.1, Female Organism Dysfunction (FOD) = (≤ 4 in MVFSFI organism domain score); OR = Odds Ratio; CI = Confidence Interval; df = degree of freedom

Table 4 showed that older age, longer duration of marriage, fluoxetine, moderate to high dosage of antidepressant, non-Malay, lower educational level, having 3 or more children and menopause were significantly associated with female orgasmic dysfunction (FOD) (p<0.1), while smoking and employment status were not significantly associated with FOD.

Table 5 Multivariate analysis of the associated factors for FOD

Variables	β	SE	*p* value	Adjusted Odds Ratio	95% Confidence Interval
Age (years)	0.034	0.065	0.600	1.034	0.911-1.174
Marital period (years)	0.057	0.070	0.413	1.059	0.923-1.215
Antidepressant Fluoxetine Escitalopram	0.461	0.469	0.178	1.861	0.753-4.597
Dosing Medium to high Low	1.671	0.484	0.001*	5.319	2.059-13.738
Race Malay Non-Malay	0.407	0.518	0.432	1.502	0.545-4.141
Education Primary Secondary and above	0.298	0.984	0.762	1.347	0.196-9.266
No of children < 3 ≥ 3	0.098	0.678	0.886	1.102	0.292-4.162
Menopause No Yes	-0.135	0.828	0.871	0.874	0.172-4.430

From the logistic regression analysis (Table 5), only the dosage of antidepressant were significantly associated with female orgasmic dysfunction (p<0.05). From this study, we found that those patients who received higher dosage of antidepressants have 5.32 times odds of having FOD compared to those who received lower dose of antidepressants.

Discussion

Orgasmic dysfunction is defined when a woman cannot reach orgasm or has difficulty to reach orgasm when sexually aroused. Primary orgasmic dysfunction occurs when a woman had never experienced orgasm and the prevalence is between 10 to 20% [22]. Secondary

orgasmic dysfunction arises when a woman who had experienced orgasm in the past but later is unable to achieve it due to various circumstances. These include having medical conditions that affect the nerve supply to the pelvis, hormonal disorders, chronic illnesses, psychiatric disorders and drugs including anti depressants (e.g. Fluoxetine, Paroxetine and Setraline); as well as cultural factors and going through different stages of life [14]. In Malaysia, female sexual dysfunction in general and female orgasmic dysfunction specifically, are still largely unexpressed. However, previous study among Malaysian women in primary health care setting showed a high prevalence of orgasmic disorder, 59.1% [3]. In comparison, western studies quoted a lower prevalence of 33% [15].

Among the factors that have been identified as higher risks for FOD in Malaysia, are non- Malay, older age, low education level, low socioeconomic status, married for more than 14 years, having more children, husband's age (more than 42 years old) and post-menopausal [3]. Various studies have described problems of orgasmic dysfunction and sexual disorders associated with antidepressants [10,17]. For example, Wernicke et al 2006 [10] stated that sexual desire and experience of orgasms are especially prominent at the seroninergic end of tricyclic antidepressants. Serretti & Chiesa (2009)[17] found SSRIs cause global sexual dysfunction, which also include orgasm. The highest rate of sexual dysfunction was seen among patients who were on Citalopram, Fluoxetine, Paroxetine and Ventalaxine.

The reduction of DA and NE levels induced by 5-HT2 activation is probably the cause of orgasmic dysfunction [23-26]. These changes, as explained by Pollack et al 1992 [23], result in alteration in the sympathetic and parasympathetic systems which have important functions in mediating orgasm. Studies found that SSRIs might affect orgasmic dysfunction more than other sex functions [27,28]. The selective serotonin reuptake inhibitors (SSRIs) have a negative impact on all phases of the sexual cycle (which includes desire, arousal, orgasm), and this is thought to involve stimulation of post synaptic serotonin 2A and 2C receptors, and serotonergic modulation of dopaminergic function [5,10,11].

These findings, and the significant differences of the prevalence of female sexual dysfunction and the percentage of desire problems that were demonstrated between patients on Fluoxetine and Escitalopram, may be explained by the treatment and the clinical factors, the selection of the groups, and various other components, as sexual dysfunction itself is a multifactorial condition, and that a woman's sexual desire may be affected by many factors, which includes menstrual cycle and hormonal changes[6,25,29,30].

Stahl (2008) stated that even though the selective serotonin reuptake inhibitors (SSRIs) share a common property, each drugs also has their own unique pharmacological properties that may account for the commonly observed clinical phenomena of different reaction to one SSRI versus another by individual patients [29]. It was also stated by Stahl (2006) [31], that Escitalopram may have less sexual dysfunction than some other SSRIs. A.K Ashton previously reported a single case of reversal of Fluoxetine-induced sexual dysfunction by switching to escitalopram, and improvement in selective-serotonin reuptake inhibitor/serotonin noradrenaline reuptake inhibitor (SSRI/SNRI) induced sexual dysfunction in 68.1% patients by switching their original serotonin agent to Escitalopram [8,32]. However, mechanisms

that are responsible for the lower likelihood of sexual dysfunction caused by Escitalopram have yet to be identified, and further long-term comparative studies are needed to examine whether Escitalopram has an advantage over other SSRIs in terms of sexual function [8, 25, 33].

In this study, we examined the risk of Female Orgasmic Dysfunction (FOD) associated with Fluoxetine and Escitalopram among 112 female patients who visited the Psychiatric Outpatient Clinic of Universiti Kebangsaan Malaysia Medical Centre (UKMMC). Our results showed that there was no significant difference among patients treated with Fluoxetine and patients treated with Escitalopram, with regards to having FOD ($p=0.178$).

The only significant difference ($p<0.05$) found was patients on moderate to high dose were 5.32 times at risk of having FOD compared to patients on low dose antidepressants. To date, this is the first study in Malaysia comparing the risk of FOD between Fluoxetine and Escitalopram, which are two types of selective serotonin reuptake inhibitors. There are some limitations in this study, the main one is the difference in the treatment duration of the two groups (Fluoxetine = 50.04 months; Escitalopram = 22.70 months). This could introduce bias towards the results as patients with orgasmic dysfunction would have abandoned the treatment. There was a significant difference in treatment duration between both groups (p value <0.0005). The explanation for this would be that Fluoxetine was first introduced in UKMMC very much earlier than Escitalopram, which was only officially prescribed in June 2005 in UKMMC. There are inherent limitations in interpreting the results of this study because of the point prevalence and cross-sectional design. Baseline assessment and pretreatment rates of sexual dysfunction in patients were not available for comparison, and the antidepressant groups were not balanced according to degree of sexual function at baseline. Since this was a cross-sectional study in nature, only an association could be determined and not a causal effect.

Conclusion

This study shows that the risk of Female Orgasmic Dysfunction increases in patients who were prescribed with high dose of antidepressants.

Acknowledgment and Ethical Considerations

This research project was approved by the Research Committee, Department of Psychiatry, Universiti Kebangsaan Malaysia Medical Centre Research Committee, 56000 Cheras, Kuala Lumpur, Malaysia.

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Received: 6 January 2011 Accepted: 23 February 2011