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Bromocriptine and pyridoxine improve quality of life in women with premenstrual syndrome

Rachna Gupta[1]*, Lalit Kumar Gupta [2], Asha Lata Sharma[3]

[1]University College of Medical Sciences and GTB Hospital, New Delhi 110095,
[2]Lady Hardinge Medical College & Smt. S.K. Hospital, New Delhi,India.
[3]Sarojini Naidu Medical College & Hospital, Agra,India..

Abstract

Objectives: Premenstrual symptoms may affect quality of life (QoL) by negatively affecting behavior and interfering with daily activities in women. In this randomized placebo-controlled clinical trial performed in women with premenstrual syndrome (PMS), treatment with bromocriptine and pyridoxine was evaluated with respect to their impact on QoL.
Methods: Women diagnosed with PMS, completed the short form of the Quality of Life Enjoyment and Satisfaction [QOLES] questionnaire before and after treatment. They were treated with placebo, bromocriptine 1.25–5 mg/day or pyridoxine 100 mg/day for 3 consecutive cycles.
Results: A one-way MANOVA revealed a significant multivariate main effect for bromocriptine and pyridoxine treatment ($p < 0.001$) given for 3 months. Bromocriptine caused a significant improvement in mean scores of six items related to physical health and mood. Women treated with pyridoxine scored significantly better on all the dimensions of QOLES questionnaire.
Conclusions: A holistic approach targeting all aspects of QoL, needs to be acquired in the management of PMS. In conclusion, pyridoxine treatment may offer improvement in all aspects of QoL in women with PMS.

Key words: Bromocriptine, Premenstrual syndrome, Pyridoxine, Quality of life

INTRODUCTION

Premenstrual syndrome (PMS) can be broadly defined as any constellation ofpsychological andphysical symptoms that recur regularly in the l uteal phase of themenstrual cycle, remit for at le ast1 week in the follicular phase and cause distr essand functional impairment.[1,2] These premenstrual symptoms may affect quality of life (QoL) by negatively affecting behavior and interfering with daily activities in women.[3,4] Prevalence of PMS is very high among women of reproductive age-group but only about 3-9 % of affected women experience distressing symptoms.[5–8] While signs and symptoms remain the defining characteristics of PMS, there is increasing consensus that the scope of assessment should include broader dimensions, such as functioning and QoL. In disorders like PMS, symptom severity may not account for a large proportion of the variance in QoL, suggesting that a complete picture of a patient's presenting illness should include some type of assessment of quality of life.[9]

QoL is intrinsically both subjective and situational and thus can only be truly defined by each individual in relative terms and based on personal history.[10] It has been suggested that subjective self-reports can be both measured and reliably quantified.[11] In these studies, standardized questionnaires for patient self-completion are administered, ideally covering all of the 'domains' of QoL, i.e., physical, functional, psychological, social, and, possibly, spiritual. The score obtained from the patient's answers can then be used for numerical comparisons.[12]

This report describes findings from a randomized placebo-controlled clinical trial performed in women with PMS, in which treatment with bromocriptine and pyridoxine was evaluated with respect to their impact on QoL.

MATERIAL AND METHODS

The study was conducted in the department of pharmacology in association with department of obstetrics & gynaecology, S. N. Medical College, Agra, India. Patients attending gynaecology out-patient were interviewed during the study period. The ethical approval was obtained from the Institutional Ethics Committee. A written informed consent was taken from the patients or their attendants.

Women of age group between 20–45 years, with regular menstrual cycle (22–35 days) having premenstrual symptoms for at least 2 or 3 menstrual cycles, were selected for the present study. These symptoms were physical, psychological and behavioural. Physical symptoms included were headache, breast tenderness and swelling, swelling of extremities, bloated abdomen, weight gain, fatigue and dizziness/fainting. The psychological symptoms included were depression, irritability, anxiety, mood swings, angry outburst, over-sensitivity while the behavioral symptoms were increased appetite, food cravings, social withdrawal, forgetfulness, easy crying, confusion, sleepless-ness. For each symptom a score was given between 1 to 3 depending upon the severity of symptoms-mild, moderate or severe. Scoring and grading of the symptoms was followed according to the method of Steiner.[13]

The women having menorrhagia, chronic psychiatric illness, breast disease/swelling, anaemia, chronic fatigue syndrome and patients taking oral contraceptives were not included in the study.

Address for correspondence*
Rachna Gupta
Department of Pharmacology
University College of Medical Sciences,University of Delhi,India
EMail address: drrachna1@rediffmail.com

Premenstrual symptom score was graded as: Grade 0 – no symptoms, Grade 1 – mild symptoms not interfering with activities, Grade 2 – symptoms interfere with activity but it is not disturbing, Grade 3 – severe, disabling symptoms.

Thus possible minimum and maximum score could be between 0 to 60. The women were diagnosed with PMS, if premenstrual symptom score was more than 5 or not less than twice the postmenstrual symptom score. The patients were categorized as mild PMS (score 6–20), moderate PMS (score 21–40 or at least 5 symptoms of grade 2) and severe PMS (score 41–60 or at least 5 symptoms of grade 3).

The short form of the Quality of Life Enjoyment and Satisfaction [QOLES] questionnaire,[14] was completed by the subjects before treatment. The QOLES questionnaire is a self-report form composed of 15 items each rated on a 5-point scale that indicates the degree of enjoyment or satisfaction experienced during the past week. A total score of items 1 to 14 was computed and expressed as a percentage of the maximum possible score of 70. The 14 items evaluated each subjects' satisfaction with her physical health; social relations; ability to function in daily life; ability to get around physically; mood; family relations; sexual drive and interest; ability to work on hobbies, work, leisure time activities; economic status; household activities; living/housing situation; and overall sense of well-being. There was a global item, number 15, that is not included in the QOLES questionnaire's total score: satisfaction with medication.

Grouping, drugs and dosage

Subjects were randomly allocated to any of the 3 groups:

Group I (control, n = 20): Placebo, ferrous sulphate tablets, 100 mg, orally daily for 3 months.

Group II (bromocriptine, n = 20): Bromocriptine initially started in the dose of 1.25 mg at

bed time for 2–3 days and then increased up to 5 mg/day in 2 divided doses, up to the

beginning of the next cycle.

Group III (pyridoxine, n = 20): Pyridoxine 100 mg/day, orally daily for 3 months.

Improvement assessment

All women completed the QOLES questionnaire and treated for 3 consecutive cycles. They were followed up monthly for 3 months. At the end of 3 months subjects again completed the QOLES questionnaire.

Statistical Analysis: Data were analyzed using the statistical package of the NCSS 2004. One way MANOVA was applied to compare the initial and post treatment scores of the 3 groups. Kruskal-Wallis one-way ANOVA on ranks was applied followed by $\div^2$ test to compare the initial and post-treatment scores of QoL (individual items) in all the three groups.

RESULTS

Baseline Data

Baseline demographic characteristics including age, marital status and parity were well balanced across treatment groups. There were no marked differences across treatment groups with respect to baseline scores of the QoL items. Global assessments of disease severity at baseline revealed the presence of mild to moderate illness that was accompanied by substantial impairment in areas of social functioning (work life, social life, and family life). All the study participants completed the questionnaire.

The split-half reliability of the QOLES questionnaire was assessed using Cronbach's á on the data for all the groups separately on items for physical health and psychological and social health. Cronbach's á based on the standardized items for the scale ranged from 0.68 − 0.84 indicating good reliability.

A one-way MANOVA revealed a significant multivariate main effect for bromocriptine [Wilks' ë = 0.23, F (15, 24) = 5.27, $p < 0.001$] and pyridoxine treatment [Wilks' ë = 0.05, F (15, 24) = 32.8, $p < 0.001$] but not for placebo [Wilks' ë = 0.54, F (15, 24) = 1.39, $p = 0.23$] given for 3 months.

Further analysis by Kruskal-Wallis one-way ANOVA followed by $\div^2$ test showed that after 3 months of the treatment with bromocriptine, there was a significant improvement in mean scores of seven items- physical health, mood, work, household activities, ability to function in daily life, living or housing situation and ability to get around physically, of QOLES questionnaire. In pyridoxine group, there was a significant improvement in mean scores of all of the 15 items of QOLES questionnaire. Women treated with pyridoxine scored significantly better on all the dimensions of QOLES questionnaire, while those assigned bromocriptine treatment scored significantly better on items indicative primarily of physical health (Table 1). Also, satisfaction with medication was reported only with pyridoxine treatment.

DISCUSSION

Data in this study show that women with PMS have a significant QoL impairment involving multi-dimensional domains (physical, psychological, social and environmental health).

Of the six items relating to physical health (physical health, work, household activities, ability to function in daily life, living or housing situation, ability to get around physically), improvement occurred in all the items with bromocriptine and pyridoxine.

Symptoms related to psychological state (leisure, sexual drive, vision and overall sense of well being) showed no improvement with placebo and bromocriptine, though improvement in mood was found with bromocriptine. Women treated with pyridoxine showed improvement in indicators of psychological state as well as social functioning (social relationships, family relationships). In addition, overall sense of well being and satisfaction with medications was found only with pyridoxine. A simplistic explanation for this could be adverse effects caused by bromocriptine. Overall post-treatment QOLES scores were significantly low for women who were randomized to placebo group than those randomized to bromocriptine and pyridoxine.

Many measurement options available to clinical researchers, well being is perhaps closest to the mark for what is important to the patients. Moreover very few comparative studies are available involving different treatment options in PMS with reference to QOLES.

This study is limited by a single measurement period of 3 months after treatment; data on long term QOLES outcomes for our study population are not available. Other limitations of this study are - QOLES scores for general population have not been obtained and its small sample size. Nevertheless, this study

Table1: Scores of subjects with premenstrual syndrome on quality of life enjoyment and satisfaction questionnaire items before and after 3 months of treatment with placebo,bromocriptine and pyridoxine

Items	Placebo		Bromcriptine		Pyridoxine	
	Before	After	Before	After	Before	After
Physical health	1.9	2.1	1.85	2.45*	2.0	3.25*
Mood	1.65	1.75	1.75	2.4*	2.0	3.4*
Work	1.7	2	1.9	2.25*	2.05	3.1*
Household activities	1.9	2.45	2.1	2.65*	1.95	3.1*
Social relationships	1.7	1.9	1.9	2.15	2.05	3.35*
Family relationships	2.1	2.35	2.1	2.25	1.95	3.2*
Leisure	2.0	2.35	2.0	2.0	1.95	2.85*
Ability to function in daily life	1.6	1.75	2	2.65*	1.95	3.35*
Sexual drive	2.1	2.3	1.95	2.0	2.05	3.05*
Economic status	1.75	1.75	1.7	1.85	2.25	2.65*
Living or housing situation	2.05	2.15	2.1	2.65*	1.95	3.3*
Ability to get around physically	1.8	1.9	1.9	2.6*	2.05	3.5*
Vision	1.85	1.9	2.1	2.35	2.05	3.4*
Overall sense of well-being	2.2	2.2	2	2.2	2.0	3.3*
Medication	1.95	1.95	2	1.75	2.05	3.45*

Overall initial and post-treatment scores compared by one-way MANOVA. Individual items compared by Kruskal-Wallis one-way ANOVA followed by $\div^2$ test. *: $p < 0.05$, significant in comparison to pre-treatment value.

provides new information on QOLES and acceptability of bromocriptine and pyridoxine in women with PMS, recruited from urban population. A holistic approach targeting all aspects of QoL, needs to be acquired in the management of PMS. In conclusion, pyridoxine treatment may offer improvement in all aspects of QoL in women with mild to moderate PMS.

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