

Compare the Effectiveness of Bromocriptine versus Vitex Agnus Castus Ovitex in Women with Hyperprolactinemia

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ABSTRACT

Objective: To compare the effectiveness of bromocriptine versus vitex agnus castus ovitex in patients with hyperprolactinemia.

Study Design: Randomized Control trial

Place & Duration of Study: Department of Obstetrics & Gynaecology, M. Islam Teaching Hospital, Gujranwala from 1st January 2020 to 30th June 2020.

Methodology: One hundred patients were included in this study. Patients detailed demographics age, sex and body mass index were recorded after taking written consent. The patients were 20 to 50 years of age. Patients were equally divided into two groups; Groups A (vitex agnus castus ovitex) and the group B (bromocriptine). Complete follow up was performed to check prolactin levels. Complications were also observed in this duration.

Results: Mean age of the patients in group A was 29.14±4.18 years with body mass index 22.43±8.74 kg/m² while in group B mean age was 30.02±1.08 years with mean BMI 23.34±4.47 kg/m². Difference between both groups was recorded on the basis of prolactin levels. Significantly no difference (p >0.05) was observed regarding prolactin levels in both groups were lower. Frequency of side effects was recorded higher in bromocriptine group as compared to vitex agnus castus ovitex group.

Conclusion: Both bromocriptine and vitex agnus castus ovitex were effective but these drugs had some side effects and the frequency of complications was lower in vitex agnus castus ovitex.

Keywords: Hyperprolactinemia, Bromocriptine, Vitex agnus castus ovitex

INTRODUCTION

The micromolar dopamine concentrations inhibit calcium inflow and thus prolactin hormone secretion by opening potassium channels and hyperpolarizing lactotrophs.^{1,2} During pregnancy, the level of dopamine gradually increases to 600 ng/dL while oestrogen and progesterone are still inhibited. However a combination of high levels of prolactin and a sudden drop in oestrogen and progesterone allows the body to produce milk after delivery despite a decreased level of prolactin (200-400 ng/dL).³

In women, hyperprolactinemia leads to menstrual and ovulation disorders and decreased progesterone levels after ovulation, and if accompanied by galactorrhea, in the absence of other causes, may be considered as the cause of amenorrhea.⁴ The inhibition by prolactin of pulsatile secretions of gonadotropin-releasing hormone (GnRH) seems to be the cause of amenorrhea because the pituitary gland responds naturally to GnRH in these patients. Additionally, this inhibition could be due to an increase in opioids. Nonetheless any treatment that decreases the level of prolactin in the blood whether removing the prolactin-secreting tumour or suppressing the secretions of prolactin, will resume ovarian activity and menstrual function. For stimulating gonadotropin secretions (luteinizing hormone, LH and FSH), GnRH is necessary and LH and FSH are not released if the level of GnRH is low and gamete production and sex steroid synthesis will not be stimulated accordingly. Therefore, infertility caused by hypogonadotropic hypogonadism is a case of hyperprolactinemia.⁵

Hyperprolactinemia is one of the increasingly common problems in gynaecological endocrinology, according to various studies. It is found in 15%-30% of women with secondary amenorrhea and oligomenorrhea.⁶

In addition to its presence in 30%-70% of women with galactorrhea or infertility, the main agent used to manage thoroughly studied pathological hyperprolactinemia is bromocriptine. The reported efficacy of these agents is 60 percent-100 percent with regard to menstrual cycle normalization, 50-80% with regard to ovarian function restoration, and 80-90% with regard to conception. These agents are considered the gold standard of therapy.⁷ These agents, however are associated with serious side effects such as vomiting, nausea, headache, fatigue, dizziness, which are the most common, while others include loss of appetite, stomach cramps, weakness, sleepiness, depression, hallucinations, chest pain, and constipation.

A study reported a dose-dependent decrease in the level of prolactin while increasing the levels of FSH, LH, and oestrogen in the treatment of women with a combination of herbal extracts.⁸ Current research has been conducted to compare bromocriptine and vitex agnus castus with regard to prolactin level control and the incidence of side effects.

MATERIALS AND METHODS

This randomized control trial study was conducted at Department of Obstetrics & Gynaecology, M. Islam Teaching Hospital Gujranwala from 1st January 2020 to 30th June 2020. A total of 100 women with age ranges between 20-45 years were enrolled. Patients detailed demographics age, body mass index, sex were recorded and those patients who had any psychotic disorder, cardiac disease, medical unfit and those were not agree excluded. Patients were divided into two equal groups A and B. 20mg OD Vitex agnus castus was given to the patients of group A and the patients of group B received 1.25-7.5mg mg bromocriptine drug at different interval of time. Outcomes

were measured after 2-weeks. Chi square test used to analyze the data. P-value <0.05 was taken as significant.

RESULTS

Mean age of the patients in group A was 29.14±4.18 years with body mass index 22.43±8.74 kg/m² while in group B mean age was 30.02±1.08 years with mean BMI 23.34±4.47 kg/m². Menstrual deformity was the most common disorder in both groups, it was 24(48%) in group A and 20(40%) in group B. Frequency of infertility was 19(38%) in vitex agnus castus group and 18(36%) in bromocriptine group (Table1).

Results were calculated, In group A prolactin level before treatment was 46.36±10.58 and after treatment it was 24.68±3.80, a significant difference was observed pre and post treatment regarding prolactin level with p-value <0.05. In group B at start of treatment prolactin level was 46.76±12.36 and after treatment it was 24.86±2.71, a significant decrease in prolactin level was observed with p-value <0.05. There was no significant difference between both groups regarding prolactin level after treatment (Table 2).

Frequency of complication in bromocriptine group was higher as compared to vitex group. In vitex group 45 (90%) patients had not any side effects while in bromocriptine group 30(60%) patients showed no any side effect. Improvement of symptoms were also observed and calculated between the groups (Table 3).

Table1: Baseline demographics and disorders between both groups

Variable	Group A (n=50)	Group B (n=50)
Age (years)	29.14±4.18	30.02±1.08
Body mass index (kg/m ²)	22.43±8.74	23.34±4.47
Disorders		
Menstrual deformity	24 (48%)	20 (40%)
Infertility	19 (38%)	18 (36%)
Others	7 (14%)	12 (24%)

Table 2: Comparison of prolactin between the patients of both groups

Prolactin Level	Group A	Group B	P value
At start	46.36±10.58	46.76±12.36	>0.05
After treatment	24.68±3.80	24.86±2.71	>0.05

Table 3: Frequency of side effects between the both groups

Variables	Group A	Group B	Total
No side effects	45	30	75
Headache	1	8	9
Gastrointestinal side effect	2	5	7
Other complications/ Dizziness	2	7	9
Recovery of symptoms			
Improved	28	24	56
Not improved	22	26	44

P>0.05

DISCUSSION

In this study we presented the effectiveness of bromocriptine versus vitex agnus castus ovitex in patients with hyperprolactinemia. Both the drugs were effective for the patients.¹¹ Infertility is the absence of conception for a year in the presence of unprotected sex; gynaecological disorders are responsible for about 40 percent of cases of

infertility. One of the most common causes of infertility is anovulation.⁹ In previous studies, different drugs were used to treat hyperprolactinemia.¹⁰

In the present study, bromocriptine group showed higher number of side effects. Menstrual deformity was the most common disorder in both groups, it was 24 (48%) in group A and 20(40%) in group B. Frequency of infertility was 19 (38%) in vitex agnus castus group and 18(36%) in bromocriptine group. These results showed resemblance to the previous studies conducted by Irum et al.¹² Vitex is more effective than bromocriptine and this was also the same as the previous study conducted by Haerifar et al.¹³ Hu et al¹⁴ found that its effects were caused by flavonoids such as casticin in vitex rotundifolia. Casticin is a potent painkiller and, along with its anti-hyperprolactinemia effects, seems to be an active element of fructus viticis.

In the previous study vitex agnus castus was used to increase production of milk 80%. But it can be used in severe cases to treat hyperprolactinemia a study conducted by Haider et al¹⁵ and Sliutz et al.¹⁶ Vitex agnus castus has dopaminergic effects, and its important compounds, particularly essential oil, affect the hypothalamic-pituitary axis and lead to decreased release of FSH and LH secretions, thereby increasing the level of progesterone, but in our study, the level of bromocriptine FH was higher compared to the levels of prolactin and LH, as they were slightly lower.¹⁷

In premenstrual dysphoric disorder, vitex was reported to be equivalent to fluoxetine in one study, while fluoxetine surpassed vitex in the other. One trial reported that latent hyperprolactinemia was superior to placebo in reducing prolactin-stimulated TRH secretion, normalization of the short luteal phase, and normalisation of the short luteal phase, which increases the mean levels of luteal progesterone and 17β-estradiol, while the other vitex found that reducing serum prolactin levels and improving cyclic mastalgia were comparable to bromocriptine. Vitex adverse events were mild and rare in general.^{18,19} The methodological quality of the included studies varied, but was moderate to high in general. The limits include, in some studies, the small sample size, the heterogeneity of the conditions at issue, and a variety of reference treatments. The results of randomised and controlled trials to date indicate the benefits of vitex extracts in the treatment of premenstrual syndrome, premenstrual dysphoric disorder, and latent hyperprolactinemia, despite some methodological limitations. Therefore, considering the findings of both primary and secondary research, bromocriptine and vitex agnus castus have been shown to positively influence patients with hyperprolactinemia. However in some cases, the dose and side effects should be considered, but these drugs are on the whole, effective.

CONCLUSION

Both bromocriptine and vitex agnus castus ovitex were effective but these drugs had some side effects and the frequency of complications was lower in vitex agnus castus ovitex.

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