

Effectiveness of Soya Powder on Severity of Perimenopausal Symptoms among Women

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Abstract: *Being a woman is very special. Nature takes a woman through series of transitions from her birth until death, which includes menarche, pregnancy, labor, motherhood and menopause. Each of these stages stands for different phases in her life which includes both physical and/or psychological changes. Signs and effects of the menopause transition can begin as early as age 35, although most women become aware of the transition in their mid to late 40s, often many years after the actual beginning of the perimenopausal window. Many pharmacological and non-pharmacological measures are being used by perimenopausal women for centuries to overcome these devastating symptoms. Effectiveness of soya powder was assessed by comparing the post-test scores of experimental and control group and the calculated student 't' value was 6.397 which was more than table value at $p < 0.05$ level of significance. A significant difference between post-test severity of perimenopause symptoms between experimental and control group was thus established.*

Keywords: Soya, Perimenopausal symptoms

Women need to devise their own rite of passage, celebration of what could be regarded as the restoration of a woman to herself.

- German Greer

1. Introduction

Being a woman is very special. Nature takes a woman through series of transitions from her birth until death, which includes menarche, pregnancy, labor, motherhood and menopause. Each of these stages stands for different phases in her life which includes both physical and/or psychological changes.

Menopause is seen more as a gateway to a second adulthood. Menopause is the permanent cessation of ovarian function. The term was originally coined to describe this reproductive age in human females, where there is an end for fertility, traditionally indicated by permanent stopping of monthly menstruation or "menses"¹.

Signs and effects of the menopause transition can begin as early as age 35, although most women become aware of the transition in their mid to late 40s, often many years after the actual beginning of the perimenopausal window.⁵ The typical age range of menopause is between ages of 40 and 60 and the average for last period is 51 years in western countries. In some developing countries, the median age for natural menopause is at 44 years. In India as per the 2007 reports, the mean age at menopause ranges from 40.32 to 48.48 years².

A study conducted in 2008 at Dr. TMA Pai Hospital, South India among 352 postmenopausal women attending outpatient department to establish the age at onset of menopause and prevalence of menopause and menopausal symptoms revealed that the age of onset of menopause was 48.7 years in Southern Karnataka and the most frequent symptoms were aching of the muscles and joints, feeling tired, poor memory, lower backache and difficulty in sleeping.³

Many pharmacological and non-pharmacological measures are being used by perimenopausal women for centuries to overcome these devastating symptoms. Soya bean one such agent used by perimenopausal women is (glycine max) a leguminous plant containing 40% protein, minerals (like calcium, iron, phosphorus, and zinc), vitamins (like B complex, vitamin E) and phytoestrogen and lecithin. FDA has recommended adding 45 to 100 mg of soya diet in a day is beneficial to alleviate menopausal symptoms.⁴

Soya contains special chemicals known as phytochemicals that seems to fight against illness and disease. Phytoestrogen, a special kind of phytochemical, appear in high quantities in soya products. These phytoestrogens are a weaker form of our own natural estrogen, and seem to help combat the symptoms of menopause. A particularly beneficial type of soya estrogen is the isoflavone. Isoflavones are linked to the reduction of serious illnesses that plague menopausal women, including osteoporosis, stroke and heart disease.⁵

It is high in phytoestrogen which is a plant chemical that acts like estrogen which is produced naturally in the body. These plant estrogens are thousands of times weaker than natural estrogen. But they also circulate in the blood at levels thousands of times higher than natural estrogen⁶.

For many women menopause has been a worrying and difficult time of life. She needs to be conscious of her own self-worth, strength, and wisdom. It is the Rites of Passage were women should go for natural remedies.

A randomized controlled trial study conducted in New York in 2002 about complementary and alternative therapies for hot flashes and other menopausal symptoms identified of 12 dealt soya or soya extracts, 10 herbs and 7 other CAM therapies showed that the food containing phytoestrogen

shows promise for the treatment of menopausal symptoms. The best source is soya in various forms such as soya beans, fortified soya milk, tofu and soya flour which contain high levels of isoflavones and calcium.⁷

Even in this modern world, a vast majority of the women are unaware of menopause- its significance and how to go through this phase of their life for which support from the health professionals are essential to educate them and help them to pass through this transition without much difficulty with the use of an most effective remedies that are available. Since, soya product is considered to be a natural remedy to alleviate the symptoms of perimenopause period without any harm, researcher perceived the importance of testing the effect of soya products in treating the perimenopause symptoms and so administering and educating the use of it to the public.

A study conducted in investigated the efficacy of dietary soy proteins containing differing amounts of isoflavones on the number and severity of vasomotor symptoms in peri and postmenopausal women. Women were divided into three group, group one consumed isoflavone extracted soy protein (control), group two. Consumed soy protein with a medium dose of isoflavones (42 mg/day) and group three consumed soy protein with a higher dose of isoflavones (58 mg/day). In conclusion, the soy protein containing 42 or 58 mg of isoflavones is no more effective than isoflavone extracted soy protein for improving the number and severity of vasomotor symptoms in peri and postmenopausal women.⁸

A study conducted at All India Institute of Medical Science, New Delhi among 180 women over the age of 45 on effect of soya as an alternative to hormone replacement therapy. Half of them were administered 30 gms of soya in their daily meals, while the other half was studied without changing their diet. At the end of 2 weeks, hot flashes were reduced by 8% in the experimental group. The result at the one year showed a decline of 18% and at the mean time hot flashes in the second group has increased by 20%.⁹

2. Methodology

Study was carried out for a duration of two months. After obtaining Ethical permission the investigator started the data collection. Self-introduction was given and the purpose of the study was explained. Researcher used non probability convenient sampling technique and identified the women having perimenopausal symptoms and assigned 20 women to experimental group and 20 women to control group. Pre test severity of perimenopausal symptoms was assessed using Modified International Menopause Rating Scale for both the groups. Soya powder was distributed to the women in the experimental group with necessary instructions about its use. 1 g of soya powder mixed with 150 ml of milk and was consumed every day morning and evening for a period of 15 days by study participants. Follow up was done every day with the experimental group. Post test was conducted for both the groups using the same scale two weeks after pretest.

Investigator concentrated on symptoms that are commonly experienced by perimenopausal women which includes eleven symptoms selected in this study as listed in

International Versions of the Menopause Rating Scale (MRS) developed by Centre of Epidemiology And Health Research Berlin in 1990 such as hot flashes, heart discomfort, sleep problems, depressive mood, irritability, anxiety, physical and mental exhaustion, sexual problems, bladder problems, dryness of vagina, joint and muscular discomfort.⁵

40 women suffering with premenopausal symptoms;

20 – Experimental group

20 – Control group

Who fulfilled the selection criteria were selected for the study Non probability convenient sampling technique was used to assign the subjects to experimental and control group based on fulfillment of selection criteria. Women having known allergy to soya products were excluded from the study as well as those who had induced menopause and were under hormonal replacement therapy were excluded along with those who were diagnosed with hypertension, heart diseases and diabetes mellitus.

3. Results

The differential mean between the pre-test and post-test of the experimental group was 6.6 with differential standard deviation of 2.9 and the calculated 't' value was 10.146 which is significant at $p < 0.01$ level. In the control group the differential mean between the pre-test and post-test was - 0.8 with differential standard deviation of 1.673 and the calculated 't' value was 2.138 which was less than the table value and hence not significant at $P < 0.05$ level. This indicated that there is significant difference between pre-test and post-test severity of perimenopause symptom in the experimental group.

The findings showed that in experimental group 60% of subjects had moderate perimenopause symptoms, 35% had severe degree of perimenopause symptoms and 5% had very severe symptoms with the mean of 22.8 and standard deviation of 4.045. Whereas in control group 40% had moderate, 60% had severe with the mean of 23 and standard deviation of 3.98. A population based survey was conducted in one of rural district of Sindh Province Pakistan from to determine the commonly reported menopausal symptoms among 3929 women aged 40-65 years using a modified Menopause Rating Scale (MRS) found that The percentages for somatic, psychological and urogenital symptoms were significantly high in women at peri and postmenopausal status, while the symptom experience of premenopausal women is lower than peri and postmenopausal women. The total MRS score was found significantly high in peri and postmenopausal women (15.2 ± 7.3) and (14.4 ± 7.8) $P < 0.001$ in comparison of Premenopausal women (11.9 ± 6.5).⁴⁹ The differential mean between the pre-test and post-test severity of nausea and vomiting of experimental group was 6.6 with the differential standard deviation of 2.9 and the calculated paired 't' value was 10.146 which was greater than table value at $p < 0.01$ level of significance. In the control group the differential mean between the pretest and post-test was - 0.8 with the differential standard deviation of 1.673 and the calculated Paired 't' value was 2.138 which was less than table value at $p < 0.05$ level of significance. Effectiveness of

soya powder was assessed by comparing the post-test scores of experimental and control group and the calculated student 't' value was 6.397 which was more than table value at $p < 0.05$ level of significance. A significant difference between post-test severity of perimenopause symptoms between experimental and control group was thus established.

This study finding is supported by a randomized double blind study conducted in at Bowman Gray School of Medicine in North Carolina to assess the efficacy and safety of a standardized compound based on extract of soy phytoestrogen in management of hot flushes among 100 older women and found that perimenopause women taking a soya supplement reported a 50% reduction in the severity of their hot flashes. However, the placebo group also reported a reduction in severity of 35%.⁹

4. Conclusion and Recommendations

The study findings revealed that majority of women had moderate degree of perimenopause symptoms. Soya powder was found effective in reduction of perimenopause symptoms among women. This indicates that there is a need for giving importance for alternative therapies to maintain the normal status of the women.

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