Clinical Efficacy and Safety of Ashokarishta, Ashvagandha Churna and Pravala Pishti in the Management of Menopausal Syndrome: A Prospective Open-label Multicenter Study

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ABSTRACT

Introduction: The menopausal period comprises about one-third of average women's life. During this period, women are vulnerable to conditions caused by estrogen deficiency from short-term discomfort to long-term health problems.

Aim: To evaluate the clinical efficacy of Ashokarishta, Ashvagandha Churna and Pravala Pishti in the management of menopausal syndrome and to evaluate changes in the quality of life in women.

Materials and methods: This trial was a multicenter single-arm study conducted at three Institutes of Central Council for Research in Ayurvedic Sciences. One hundred fifteen women aged between 40 and 55 years with Kupperman menopausal index score ≥15, follicle-stimulating hormone ≥20 IU/L, and endometrial thickness ≤5 mm were included in the study. Three Ayurvedic classical formulations, viz., Ashokarishta, Ashvagandha Churna and Pravala Pishti, were administered for 12 weeks followed by subsequent 2 weeks without intervention follow-up. Outcome measures were changes in menopausal symptoms using menopause rating scale (MRS) and improvement in the quality of life using menopause-specific quality of life (MENQOL) questionnaire and they were assessed at the baseline, 84th day, and at the end of 2 weeks after the completion of intervention period. Paired sample t-test was used to compare mean change from baseline to 84th day. A p-value <0.05 was considered significant.

Results: The findings of the study reveal that the effect of therapy has shown statistically significant decrease in MRS total score (p-value <0.001). The mean MRS total score at the baseline was 22.43 and decreased to 5.29 after treatment at 84th day, and further reduced to 5.06 at the 14th week (follow-up period without trial interventions). The improvements of MENQOL in four domains, viz., vasomotor, psychosocial, sexual, and physical, at the end of 12th week and 14th week were also significant (p-value <0.001) in comparison with the baseline. Further, all the safety parameters like liver function tests and kidney function tests remained within the normal limits throughout the trial period and no adverse events or adverse drug reaction were reported, which confirm the clinical safety of the trial drugs.

Conclusion: Ashokarishta, Ashvagandha Churna and Pravala Pishti are found to be safe and effective in the management of menopausal syndrome.

Keywords: Ashokarishta, Ashvagandha churna, Menopausal syndrome, Menopause rating scale, Menopause-specific quality of life, Pravala pishti.


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Conflict of interest: None

INTRODUCTION

Women, who constitute half of the world’s population, are currently enjoying a life expectancy of 84.3 years approximately in developed countries.1 Menopause is a natural phenomenon and mostly occurs at the age of 50 to 52 years in a woman.2 Different stages, i.e., perimenopause, menopause, and postmenopause, comprise a half or a third of a woman’s life, particularly in developing countries.3 It is characterized by an altered hormonal status and a subsequent decrease in quality of life, affecting each woman differently. Specifically, the decline and eventual cessation of estrogen production are associated with the appearance of uncomfortable symptoms (hot flushes, night sweats, breast tenderness, vaginal dryness, irregular menses, mood changes, and vaginal atrophy) as well as pathologies, such as osteoporosis, heart disease, hypercholesterolemia, endothelial dysfunction, vascular inflammation, hyperglycemia, and depression.4
Clinical studies indicate that the use of hormone replacement therapy (HRT) in menopause needs to be carefully assessed and risks and benefits of the therapy should be evaluated by the clinician for each individual woman. Herbal preparations, food supplements, healthy living, and healthy mental status were mentioned as possible alternatives for managing menopausal symptoms.

In Ayurveda, Rajonirritti kala (the period of permanent cessation of menstrual cycle) is considered as 50 years\(^5,6\) mentioned by all classical texts without any controversy. It is a consequence of Jaraawastha (senility),\(^7\) and Vata remains dominant during this period.\(^8\) Ashokarishta, Ashvagandha churna and Pravala pishti are among thousands of traditional Ayurvedic formulations which are widely used to treat ailments in women. Ashokarishta, a polyherbal formulation, contains herbs having Hridya (cardiotonic), Balya (immune-modulator), Deepaniya (carminative), Pachaniya (digestive), Medhya (brain tonic) properties. Further, Ashoka (Shorea robusta Roxb. willd), the principal ingredient of the formulation has the action,viz., Daha shaman (alleviates burning sensation in the body), pittahara due to its sheeta guna.\(^9\) Ashvagandha churna is a well-known Balya (immune modulator), Vayasthapaka (rejuvenator), and Manastarpaka (brain tonic). Pravala pishti is having Pittahara property and is a rich source of calcium. Due to above actions and uses and as these drugs are in use since long safely and effectively, their efficacy in the present context needs to be evaluated. Keeping this in view, the present study was designed to establish the efficacy of Ashokarishta, Ashvagandha churna and Pravala Pishti in the management of menopausal syndrome.

**OBJECTIVES**

The primary objective was to assess the clinical efficacy of Ashokarishta, Ashvagandha churna and Pravala Pishti in the management of menopausal syndrome and secondary objective was to assess the changes in the quality of life of the women with menopausal syndrome.

**MATERIALS AND METHODS**

**Study Design and Setting**

This was a multicenter single-arm study conducted at three peripheral Institutes of Central Council for Research in Ayurvedic Sciences, namely, Regional Ayurveda Research Institute for Mother and Child Health Care, Nagpur; Regional Ayurveda Research Institute for Skin Disorders, Ahmedabad; and Regional Ayurveda Research Institute for lifestyle related disorders, Thrivananthapuram.

The study was conducted as per the existing guidelines of good clinical practices of India and Declaration of Helsinki. The study protocol was approved by the Institutional Ethics Committee of each participating center and the study was also registered in Clinical Trial Registry of India (CTRI/2012/03/002538).

**Study Participants**

Total 116 menopausal women were recruited for the trial from the outpatient departments of all the participating centers after obtaining written informed consent. Patients were screened in accordance with inclusion and exclusion criteria mentioned in the protocol.

**Inclusion Criteria**

Women between the age of 40 and 55 years; with amenorrhea for ≥12 months; Kupperman menopausal index score ≥15; levels of follicle-stimulating hormone (FSH) ≥20 IU/L, and endometrial thickness ≤5 mm and who were willing to participate were included in the study.

**Exclusion Criteria**

Patients with evidence of malignancy, who has had surgical menopause, or those who were diagnosed with mental illness were excluded. Moreover, patients suffering from systemic diseases, such as diabetes melitus, hypertension, rheumatoid arthritis, coronary heart disease, patients with concurrent serious hepatic disorder (defined as aspartate aminotransferase and/or alanine aminotransferase, total bilirubin, alkaline phosphatase >2 times upper normal limit) or renal disorders (defined as serum creatinine >1.2 mg/dL), chronic obstructive pulmonary disease, hypothyroidism, and any other major illness were also vetoed from the study. The women on prolonged (>6 weeks) medication with corticosteroids, antidepressants, anticholinergics, or any other drugs that may have an influence on the outcome of the study; alcoholics and/or drug abusers; and those who have participated in any other clinical trial in the past 6 months of screening were also excluded.

**Study Interventions**

Ashokarishta,\(^10\) Ashvagandha churna,\(^11\) and Pravala pishti,\(^12\) three classical Ayurvedic formulations, were procured from Good Manufacturing Practice-certified Ayurvedic pharmaceutical industries and standardized following the standard laid in Ayurvedic Pharmacopoeia of India.\(^13\) Ashokarishta was administered orally in a dose of 25 mL twice a day with equal quantity of water after food. Ashvagandha churna (3 gm) and Pravala pishti (one capsule of 250 mg) were administered orally twice a day with milk just half an hour before food intake. These treatment schedules were continued for 12 weeks followed by sub-
sequent 2 weeks follow-up without trial interventions.

**Study Procedure**

On the enrollment day at baseline (visit 1), patients’ demographic profile, medical history, general physical and systemic examination, assessment of clinical/Ayurvedic parameters and scoring of menopause rating scale (MRS), menopause-specific quality of life (MENQOL) questionnaire were recorded. Trial drugs and drug compliance report form was also given and the subsequent visits were planned at an interval of 2 weeks [14th day (visit 2), 28th day (visit 3), 42nd day (visit 4), 56th day (visit 5), 70th day (visit 6), and 84th day (visit 7)]. Patients were assessed and study medications were given at each subsequent visit till 84th day. In addition to 12 weeks (84 days) intervention period, a without drug follow-up at 14th week was also scheduled. Details of clinical assessment and study schedule are given in Flow Chart 1.

Data of all the patients were recorded in predesigned case report forms (CRFs) and were also entered in electronic formats (e-forms) designed in MS-Excel with many data validation checks to ensure correct data entry. The e-forms and xerox of the CRFs along with the scorings and laboratory investigation reports of the patients were sent by the participating centers to the Council's headquarters on a weekly basis for the purpose of clinical trial monitoring.

Out of the total 116 patients enrolled in the study, 7 dropped out during the course of the study. Intention-to-treat analysis was done and the data of all those patients who have completed at least 14th day visit were imputed by last-observation carried-forward (LOCF) method. Patients who dropped out after baseline visit only were excluded from analysis. Hence, data of a total 115 patients were used for statistical analysis. Flow Chart 2 shows the outflow of the patients in the study.

**Efficacy Evaluation through Outcome**

The primary outcome measure was change in menopausal symptoms using MRS score and was assessed at the baseline, end of 12th week, and the end of 14th week. The MRS has 11 symptoms, and each was rated on a 5-point scale of severity. It is also divided into three subscales: somatic, psychological, and urogenital. The secondary outcome measure was changes in the quality of life of the study participants from the baseline and assessed at the end of 12th week and 14th week by using MENQOL questionnaire. It contains 29 items with four domains: vasomotor, psychosocial, physical, and sexual scores range from 0 to 6. Lower scores indicate better quality of life.
Statistical Analysis

The efficacy and safety parameters were analyzed according to the intention-to-treat analysis. Missing values were imputed by the LOCF method. Statistical analysis was performed using Statistical Packages for Social Sciences. Statistical significance was defined as p-value <0.05. Primary and secondary outcome measures; changes in the scores for MRS and MENQOL questionnaire from the baseline to 12 weeks were analyzed by using paired t-test.

RESULTS

Data of 115 women fulfilling the inclusion criteria were used for statistical analysis. The baseline demographic data and outcome measures of the participants are summarized in Table 1. Data revealed that the mean [standard deviation (SD)] age of the participants was 49.24 (3.64) years; 85.2% of the participants were married, and 78.3% were housewives; 64.3% of the participants belonged to urban area, and 75.7% of patients had sleep disturbances.

Table 1: Baseline characteristics of study participants (n = 115)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean (SD)</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>49.24 (3.643)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>98 (85.2%)</td>
<td></td>
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<tr>
<td>Widow</td>
<td>15 (13.0%)</td>
<td></td>
</tr>
<tr>
<td>Educational status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>10 (8.7%)</td>
<td></td>
</tr>
<tr>
<td>Read and write</td>
<td>104 (90.4%)</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desk work</td>
<td>6 (5.2%)</td>
<td></td>
</tr>
<tr>
<td>Field work</td>
<td>19 (16.5%)</td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>90 (78.3%)</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above poverty line</td>
<td>73 (63.5%)</td>
<td></td>
</tr>
<tr>
<td>Below poverty line</td>
<td>42 (36.5%)</td>
<td></td>
</tr>
<tr>
<td>Habitat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>74 (64.3)</td>
<td></td>
</tr>
<tr>
<td>Semisurban</td>
<td>23 (20.0)</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>18 (15.7)</td>
<td></td>
</tr>
</tbody>
</table>

Effect of the Trial Drugs on the Score of MRS

At baseline, the MRS total score was 22.43 (8.24) and 36.82% reduction was seen after 4 weeks, 63.31% after 8 weeks, 76.41% after 12 weeks, and 77.44% after 14 weeks. The effect of therapy has shown statistically significant (p-value <0.001) decrease in MRS total score (Table 2).

The test formulations also showed statistically significant (p <0.001) improvement in all the three MRS subscale scores (somatic, psychological, and urogenital symptoms) at all time intervals when compared with their respective baseline score. In somatic subscale, at the end of 12 weeks, the score was 2.45 (3.21) and 72.87% reduction was seen. At the end of 14th week, the score was 2.23 (1.67) and 75.3% reduction was seen. Further, in psychological and urogenital subscales, the effect of the treatment was 74.17% (2.58 ± 2.01) and 85% (0.51 ± 1.13) respectively, at the end of 12 weeks and 75.87% (2.41 ± 2.09) and 87.35% (0.43 ± 0.98) at the end of 14 weeks respectively (Graph 1).

Effects of Trial Drugs on Total and Different Domains of MENQOL Score

The effect of treatment on MENQOL is shown in Graph 2 and Table 2. A significant reduction in total MENQOL scores was observed after the treatment of 12 weeks and also at the end of 14 weeks (2-week follow-up period) in comparison to the baseline. Further, in vasomotor domain, the reduction in the symptoms at the end of 12 weeks was 2.3 (2.79), i.e., 77.84%, and 14 weeks 1.91 (2.5), i.e., 81.6% in comparison to baseline score, i.e., 10.38 (4.9); on psychosocial domain the reduction in the symptoms at the end of 12 weeks was 8.75 (6.54), i.e., 60.8% in comparison with baseline score, i.e., 21.0 (7.54). Similarly, in physical domain, the reduction in the symptoms at the end of 12 weeks was 18.2 (11.8), i.e., 57.7%, and at the end of 14 weeks 16.9 (11.8), i.e., 60.8% in comparison with baseline, i.e., 42.98 (13.1). In sexual domain, the reduction of symptoms from baseline score was 3.6 (5.1) to 0.8 (2.33), i.e., 78.1% at the end of 12 weeks and 0.7 (2.2), i.e., 80.6% at the end of 14 weeks.

Effect of the Drugs on Safety Parameters

The effect of this treatment on liver function tests and renal function tests was assessed at baseline and at 84th day. The values were within range during the entire period (Table 3, Graphs 3 to 5). These observations validate that these classical drugs are safe for human use. Further, no adverse drug effect or adverse events were reported during the treatment period. The adverse drug reactions (e.g., headache, dizziness, nausea, vomiting)/events if any were also recorded during study period in a prescribed format.
In this study, Ashokarishta, Ashvagandha Churna and Pravala Pishti in a combination have shown significant efficacy to reduce the signs and symptoms in menopausal women.

The total MRS score and scores of three subscales have been significantly decreased at 12th week (84th day) and at 14th week as compared with the baseline score. Further, there was significant improvement in the MENQOL scales at the end of 12th week in comparison to initial values.

Oxidative stress plays an integral part of the ageing process and results from the overproduction of free radicals, which overwhelm the body’s antioxidant defense mechanisms. The decline in antioxidant level combined with a gradual loss of estrogens in the female body is highly associated with the various sequel of menopausal syndrome. Ashvagandha is well known for its antioxidant, adaptogenic, rasayana (rejuvenating), and antistress effects and thus help in improving MRS total score and MENQOL score in the present study. Earlier studies suggest the potential role of Withania somnifera (Ashvagandha) in improving the quality of life in breast cancer patients and related problems. The menopause-induced hormonal deficit has been linked to...
an increase in inflammatory cytokines within the serum, such as tumor necrosis factor-α, interleukin (IL)-4, IL-10, and IL-12. Ashvagandha and its constituents have potent anti-inflammatory activity,\textsuperscript{20,21} which may be helpful in relieving the inflammation, pain, and associated symptoms during menopausal syndrome. Further, withanolides and active constituents of Ashvagandha serve as an important hormone precursor that can convert the hormones as needed. It is reported that Ashvagandha can regulate important physiological processes,\textsuperscript{22} which are supposed to be beneficial in improvement of various parameters in the present study.

Ashokarishta is one of the Ayurvedic polyherbal-fermented liquid formulations known to cure gynecological disorders. It is considered as an ideal rejuvenator.\textsuperscript{23} Ashokarishta has good free radical scavenging, reducing power, and superoxide scavenging activity.\textsuperscript{23}

The test drugs significantly decreased the FSH level, while showing nonsignificant increase in estradiol content as compared with the baseline values. Previous studies suggest that serum estrogen concentration decreased significantly with the increase in age and a steeper decline was observed at higher age, while FSH concentration increased significantly with advancement of age and a steeper increase was observed at higher

<table>
<thead>
<tr>
<th>Parameters (n = 115)</th>
<th>Baseline</th>
<th>84th day</th>
<th>\textit{t}-value\textsuperscript{a}</th>
<th>\textit{p}-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood urea (mg/dL)</td>
<td>22.86 (6.270)</td>
<td>21.97 (4.991)</td>
<td>1.684</td>
<td>0.095</td>
</tr>
<tr>
<td>Serum uric acid (mg/dL)</td>
<td>4.27 (0.895)</td>
<td>4.32 (0.746)</td>
<td>0.560</td>
<td>0.577</td>
</tr>
<tr>
<td>Serum creatinine (mg/dL)</td>
<td>0.75 (0.150)</td>
<td>0.74 (0.135)</td>
<td>1.049</td>
<td>0.297</td>
</tr>
<tr>
<td>Serum calcium (mg/dL)</td>
<td>9.22 (1.223)</td>
<td>9.45 (0.751)</td>
<td>1.878</td>
<td>0.063</td>
</tr>
<tr>
<td>SGOT (IU/L)</td>
<td>23.13 (7.569)</td>
<td>23.35 (7.274)</td>
<td>0.331</td>
<td>0.742</td>
</tr>
<tr>
<td>SGPT (IU/L)</td>
<td>24.19 (9.486)</td>
<td>24.13 (11.308)</td>
<td>0.065</td>
<td>0.948</td>
</tr>
<tr>
<td>Total protein (g/dL)</td>
<td>7.08 (0.624)</td>
<td>7.34 (0.453)</td>
<td>4.001</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Serum albumin (g/dL)</td>
<td>4.24 (0.516)</td>
<td>4.37 (0.435)</td>
<td>3.021</td>
<td>0.003*</td>
</tr>
<tr>
<td>Serum globulin (g/dL)</td>
<td>2.86 (0.636)</td>
<td>2.99 (0.563)</td>
<td>2.502</td>
<td>0.014*</td>
</tr>
<tr>
<td>Conjugated bilirubin (mg/dL)</td>
<td>0.38 (0.236)</td>
<td>0.36 (0.236)</td>
<td>1.245</td>
<td>0.216</td>
</tr>
<tr>
<td>Unconjugated bilirubin (mg/dL)</td>
<td>0.21 (0.121)</td>
<td>0.37 (1.943)</td>
<td>0.895</td>
<td>0.373</td>
</tr>
<tr>
<td>Serum alkaline phosphatase (U/L)</td>
<td>162.46 (44.73)</td>
<td>154.37 (45.66)</td>
<td>1.937</td>
<td>0.055</td>
</tr>
</tbody>
</table>

Values are expressed as mean (SD); \textsuperscript{a}Compared using paired \textit{t}-test at baseline and 84th day; \textsuperscript{*} \textit{p}-value <0.05 has been considered as significant; SGOT: Serum glutamic oxaloacetic transaminase; SGPT: Serum glutamic pyruvic transaminase

Graph 3: Effect of the trial drug on safety parameters [blood urea, serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT)]

Graph 4: Effect of the trial drug on safety parameters (serum uric acid and serum creatinine)

Graph 5: Effect of the trial drug on safety parameters (serum alkaline phosphatase)
Clinical Efficacy and Safety of Ashokarishta, Ashvagandha Churna and Pravala Pşhti

From the present study, it is concluded that Ashokarishta, Ashvagandha Churna and Pravala Pşhti are effective in the management of menopausal symptoms in place of HRT and other therapies. Further, it is suggested that a randomized clinical trial may be conducted to corroborate the result of this study.

ACKNOWLEDGMENTS

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REFERENCES

रोजनिवृत्ति जन्म लक्षणों के प्रबंधन में अशोकारिट, अज्ञापण चूर्ण और प्रवाल पिंड की नैदानिक प्रमाणकारिता का मूल्यांकन — एक प्रत्याशित बुद्धिमत्ता औपन लेखल अध्ययन

'रिकू' तोमर, 'बसव' रमण, 'ज्वान' कुमार, 'सगारा' ओवा, 'जल' घुड़, 'विश्व' फातिकी, 'बिश्व' वादव

रिकू तोमर, बसव रमण, ज्वान कुमार, सगारा ओवा, जल घुड़, विश्व फातिकी, बिश्व वादव, कर्त्तव सिंह श्रीमान

रूपन्नक एक महिला के जीवन कारण का आंशिक वृत्तांकन विज्ञान रोजनिवृत्ति काल में व्याप्त होता है। इसी कारण में इंस्ट्रुक्शन की कल्पना के परिणाममत्रम महिलाएं नामा प्रकार से रोजनिवृत्ति जन्म लक्षणों से प्रस्तुत होते हैं।

लक्षण: शिकित्सक मूल्यांकन रोजनिवृत्ति जन्म लक्षणों में अशोकारिट, अज्ञापण चूर्ण और प्रवाल पिंड (आयुर्वैदिक औषधियों) की नैदानिक प्रमाणकारिता के साथ—लाइस्ट प्रस्तुत महिलाओं के जीवन की गुणवत्ता में परिवर्तन का अध्ययन करता。

लक्षण एवं विकल्प: यह एक बुद्धिमत्ता अध्ययन है जो कि संबंधित आयुर्विज्ञान परिषद द्वारा तीन संस्थानों में किया गया था। इस अध्ययन में कुल 115 प्रतिमाग्री महिलायें; जिनकी वय 40-55 वर्ष, कुंवर्मन मेनेचेनल इंडेस्क स्कोर 215; FSH 20-220 IU/L और इंटेन्टीवियल मोटोविल 55mm थी, को अध्ययन में सम्मिलित किया गया है। अशोकारिट, अज्ञापण चूर्ण एवं प्रवाल पिंडी जैसे तीन आयुर्वैदिक शारीरिक योग्यताओं को 12 सप्ताह तक रोगियों को दिया गया था एवं आगामी 2 सप्ताह में नियम और दिए कोन्सलटन्स किया गया था। यह अध्ययन में प्रबंधन मेनेचेनल स्टेट स्कोर (MRS) से रोजनिवृत्ति जन्म लक्षणों एवं मेनेचेनल स्थायिक कालिटी ओव लाइक (MENOL) प्रमाणीकृत द्वारा प्रस्तुत महिलाओं के जीवन की गुणवत्ता में बदलाव देखेंगे।

परिणाम: इस अध्ययन के निकायानुसार, उपचार चेहरे प्रबंधन में MRS कुल स्कोर (p-value <0.001) में साधित रूप से महत्वपूर्ण कमी दिखी है। शुभारंभ में अभियन ओलिफेंट (MRS) कुल स्कोर 22.43 था जो कि 12 सप्ताह के बाद घटके के 5.29 हो गया एवं आगामी 2 सप्ताह में स्कोर 5.06 हो गया था। संपूर्ण रूप से विकल्प के अंत में कुल MRS स्कोर में 77.4 % प्रभाव/कमी देखी गई। प्रतिमाग्री महिलाओं के जीवन की गुणवत्ता में 4 क्षेत्रों जैसे कि बेलोगोट्ड, मनस्तासाम्यक अवस्था, लोगोग्राफी एवं शारीरिक प्रतिक्रिया में सुधार पाया गया था, जो कि विकल्प के शुभारंभ में 12 एवं 14 सप्ताह में तुलनात्मक महत्वपूर्ण रूप से अधिक है (p-value <0.001)। विकल्प के उपचार इन औषधियों योग्यों के शरीर में कोई भी तुप्पास त्रुटि त्वचा के लक्षण नहीं पाये गए थे।

विवरण: इस अध्ययन के निकायानुसार यह स्पष्ट होता है कि अशोकारिट, अज्ञापण चूर्ण एवं प्रवाल पिंडी औषधियों को रोजनिवृत्ति जन्म लक्षणों में प्रभावी दंग से प्रयोग किया जा सकता है तथा यह जीवन की गुणवत्ता में सुधार हेतु भी अति समानार्थ हो सकता है।