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Original Article

EVALUATING THE IMPACT OF PHYSIOTHERAPY COMBINED WITH HORMONE REPLACEMENT THERAPY ON POSTMENOPAUSAL SYMPTOMS AND QUALITY OF LIFE

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ABSTRACT

Objective: This study aimed to evaluate the impact of combining physiotherapy with hormone replacement therapy (HRT) on postmenopausal symptoms and quality of life in middle-aged women.

Methods: This experimental study involved 25 postmenopausal women aged 45 to 65 Y, all of whom were experiencing moderate to severe menopausal symptoms and were assigned to receive a combination of HRT and physiotherapy. The HRT regimens included either estrogen-only therapy or combination therapy with estrogen and progesterone. Physiotherapy sessions comprised structured exercises, including aerobic activities, kegel exercises, and core strengthening. The study lasted six weeks, with assessments conducted at baseline, two weeks, four weeks, and six weeks using the Menopause Rating Scale (MRS) and Numeric Pain Rating Scale (NPRS). Data were analyzed using repeated-measures ANOVA and paired t-tests to evaluate within-group differences.

Results: The group receiving combined HRT and physiotherapy showed significant reductions in MRS and NPRS scores over the six-week period. The mean MRS score decreased from 32.04 at baseline to 13.52 by week six. Similarly, NPRS scores improved, with the mean score dropping from 6.76 at baseline to 2.12 by week six. These reductions were statistically significant ($p<0.001$), indicating substantial improvement in both menopausal symptoms and pain perception.

Conclusion: The integration of physiotherapy with HRT resulted in significant improvements in postmenopausal symptoms and quality of life. The findings suggest that this combined approach is highly effective in managing postmenopausal symptoms and enhancing the quality of life for middle-aged women. Further research with larger sample sizes and extended follow-up periods is recommended to confirm these results.

Keywords: Hormonal replacement therapy, Postmenopausal symptoms, Physiotherapy, Hormone therapy and exercise, Menopausal symptom management, HRT vs physiotherapy, Menopause-related quality of life, Physiotherapy benefits for menopause

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INTRODUCTION

Postmenopausal symptoms can significantly impact the quality of life in middle-aged women. Common symptoms such as hot flashes, night sweats, mood swings, vaginal dryness, and sleep disturbances can be debilitating [1]. Hormone Replacement Therapy (HRT) has long been a primary treatment for alleviating these symptoms by replenishing the body's estrogen and progesterone levels, which decline during menopause [2]. Estrogen and progesterone play crucial roles in regulating the reproductive system, maintaining bone density, and influencing mood and cardiovascular health [3]. The decline in these hormones during menopause leads to the variety of symptoms experienced by postmenopausal women [4]. While HRT effectively mitigates many of these symptoms, its use is sometimes limited by contraindications and concerns about long-term safety [5]. Consequently, there is increasing interest in complementary therapies that can be used alongside HRT to enhance its benefits and potentially reduce the required dosage of hormones [6].

One such complementary therapy is physiotherapy, which involves structured physical exercises designed to improve overall health and well-being [7]. Physiotherapy has shown promise in managing various menopausal symptoms. Exercise can help improve cardiovascular health, reduce the risk of osteoporosis by enhancing bone density, and improve muscle strength and flexibility [8]. Additionally, physical activity is known to release endorphins, which can improve mood and alleviate pain [9].

This study aims to evaluate the effectiveness of combining physiotherapy with HRT in alleviating postmenopausal symptoms and improving the quality of life in middle-aged women.

Role of physiotherapy in postmenopausal symptoms

Physiotherapy is instrumental in managing postmenopausal symptoms, providing a comprehensive approach that complements traditional treatments like Hormone Replacement Therapy (HRT) [10]. As women undergo menopause, they often experience various physical and psychological challenges that can significantly affect their quality of life. Here's how physiotherapy helps:

Bone health

Menopause leads to a drop in estrogen, which can decrease bone density and increase osteoporosis risk. Weight-bearing and resistance exercises prescribed in physiotherapy help stimulate bone growth and slow bone loss, reducing fracture risk [11].

Muscle strength and flexibility

Strength training and flexibility exercises maintain muscle mass and joint flexibility, crucial for postmenopausal women who may face muscle weakness and joint stiffness. These exercises improve overall physical function, ease daily activities, and reduce fall risk [12].

Cardiovascular health

Menopause increases cardiovascular disease risk due to changes in lipid profiles and increased central fat. Aerobic exercises like walking, cycling, and swimming enhance heart function, lower blood pressure, and improve cholesterol levels [13].

Pain management

Chronic pain, such as joint and back pain, is common in postmenopausal women. Physiotherapy techniques, including manual therapy, stretching exercises, and modalities like heat and cold therapy, can alleviate pain [15]. Exercises improving posture and body mechanics also help prevent musculoskeletal pain [14].

Psychological benefits

Exercise reduces symptoms of anxiety and depression, improves

mood, and enhances mental well-being. Group physiotherapy sessions offer social support, beneficial for mental health [16, 17].

Pelvic floor health

Menopause can weaken pelvic floor muscles, causing urinary incontinence. Physiotherapists guide women through pelvic floor exercises like Kegels to strengthen these muscles and improve bladder control [18].

MATERIALS AND METHODS

Study design: experimental study

Sample design: Convenient sampling method.

Study population: study has been done on middle-aged women experiencing postmenopausal symptoms.

Sampling size: (HRT plus Physiotherapy): 25 participants

Sampling method: Samples were chosen by observing the inclusion and exclusion criteria.

Inclusion criteria

- Women aged 45 to 65 Y.
- Experiencing postmenopausal symptoms such as hot flashes, night sweats, vaginal dryness, mood swings, and sleep disturbances.
- Confirmed postmenopausal status (absence of menstruation for at least 12 consecutive months).
- Willingness to participate in the study and provide informed consent.

Exclusion criteria

- Women who have previously received or are currently receiving HRT.
- Women with contraindications to HRT, including a history of hormone-dependent cancers, thromboembolic events, or severe cardiovascular diseases.
- Women with significant comorbidities that may confound study outcomes.
- Women with cognitive impairments or language barriers that would hinder their ability to participate in the study or provide informed consent.

Recruitment

Participants will be recruited from the Department of Obstetrics and Gynaecology at Pacific Hospital.

Intervention

For the HRT component, individualized regimens were devised, incorporating either estrogen-only therapy or combination therapy with estrogen and progesterone, delivered orally or via transdermal patches, with typical dosages ranging from 1-2 mg daily for oral estradiol tablets, 0.025-0.1 mg/day for transdermal estradiol patches, and 0.3-1.25 mg daily for oral conjugated estrogens tablets. Combination therapies included estradiol and norethindrone acetate tablets at a dosage of 1 mg/0.5 mg daily and estradiol and levonorgestrel transdermal patches at a dosage of 0.045 mg/0.015 mg per day. The physiotherapy sessions, conducted at the Physiotherapy Department of Pacific Medical College and Hospital, Udaipur, followed a structured one-hour protocol. This encompassed warm-up exercises (2-minute gentle marching, dynamic stretches of 10 repetitions per leg/arm, and 6 min of walking or slow jogging), aerobic activities (20 min of brisk walking or stationary cycling at moderate intensity), kegel exercises (10 min including 3 sets of 10 contractions each for basic kegels, quick flicks, and 5 contractions each for endurance holds), and back strengthening/core exercises (15 min including 2 sets of 15 repetitions for pelvic tilts, 2 sets of 10 repetitions per side for bird-dog, 2 sets of 10 repetitions for bridge, and 2 sets of 10 repetitions for straight leg raises with one knee bent and the other raised to 70 degrees). A cool-down routine (2 min of gentle walking and 5 min of static stretching) concluded each session. Assessments were conducted at baseline, two weeks, four weeks, and six weeks, utilizing validated questionnaires, including the Menopause Rating Scale (MRS) and Numeric Pain Rating Scale (NPRS) to gauge the severity of menopausal symptoms and assess quality of life.

Fig. 1: Back strengthening exercise (Straight leg raise)

Fig. 2: Back stenghtening exercise bird dog

Fig. 3: Back strengthening Exercise Bridge

Fig. 4: Patient performing kegal exercise

Study duration: 6 w

Materials used:

• Paper-pencil

• Chair

• Assessment form

• Informed consent

Data collection

Data will be collected at baseline (prior to starting HRT), and then at 2 w, 4 w, and 6 w intervals. The following measures will be used:

- **Menopause rating scale (MRS):** To assess the severity of menopausal symptoms, including hot flashes, night sweats, and mood swings.
- **Numeric pain rating scale (NPRS):** To evaluate the level of pain experienced by participants, particularly related to musculoskeletal discomfort.

RESULTS

The study assessed the effectiveness of combining physiotherapy with hormone replacement therapy (HRT) in alleviating postmenopausal symptoms and enhancing the quality of life in middle-aged women. The analysis focused on patient, which received both physiotherapy and HRT, comprising 25 participants aged between 45 and 60 Y.

The Menopause Rating Scale (MRS) scores demonstrated a significant decrease over the six w period. Initially, the mean MRS score was 32.04 (SD = 8.11), which reduced to 14.24 (SD = 8.27) by week 6, representing a substantial mean reduction of 17.8 points. Intermediate scores also showed consistent improvement, with means of 24.08 (SD = 7.51) at week 2 and 19.88 (SD = 8.33) at week 4. These reductions were statistically significant over time ($F(2, 48) = 82.34$, $p<0.001$).

In addition to the MRS scores, the Numeric Pain Rating Scale (NPRS) scores exhibited considerable improvement. The pre-test mean NPRS score was 6.76 (SD = 1.66), which decreased to 2.12 (SD = 1.53) by week 6, indicating a mean reduction of 4.64 points. Scores at week 2 and week 4 were 4.84 (SD = 1.97) and 3.40 (SD = 2.12), respectively, with significant reductions confirmed over time ($F(2, 48) = 76.12$, $p<0.001$).

This outcome reinforced the benefits of the combined treatment approach

DISCUSSION

The findings of this study highlight the significant benefits of combining physiotherapy with Hormone Replacement Therapy (HRT) in alleviating postmenopausal symptoms and improving the quality of life in middle-aged women. Over six weeks, the integration of these interventions led to substantial reductions in both the Menopause Rating Scale (MRS) and Numeric Pain Rating Scale (NPRS) scores, supporting the efficacy of this combined approach.

The observed decrease in mean MRS scores, from 32.04 at baseline to 14.24 by week 6, underscores the potential of physiotherapy to complement HRT in symptom management. Previous studies have demonstrated that physiotherapy interventions such as aerobic and resistance exercises can effectively address common menopausal symptoms, including hot flashes, joint pain, and sleep disturbances

[19, 20]. These exercises improve cardiovascular health, increase bone density, and enhance muscle strength, aligning with the improvements reported by the participants in this study.

Similarly, the significant reduction in NPRS scores (mean reduction of 4.64 points) highlights the role of physiotherapy in managing chronic pain, a prevalent issue among postmenopausal women. Pain alleviation was likely achieved through targeted exercises that enhance joint mobility and muscle flexibility alongside modalities such as heat therapy and manual stretching [21]. This finding is consistent with earlier research demonstrating the effectiveness of physiotherapy techniques in mitigating musculoskeletal discomfort and improving functional outcomes [22].

In addition to physical improvements, the psychological benefits of combined physiotherapy and HRT were notable. Participants reported reduced anxiety and depression symptoms, likely attributable to endorphin release induced by physical activity and the hormonal balance restored by HRT [23, 24]. Improved sleep quality and mood were also observed, further contributing to enhanced overall well-being.

Another important aspect is the improvement in pelvic floor health, as evidenced by participants reporting better urinary control and fewer instances of incontinence. Pelvic floor exercises, such as Kegels, have been well-documented for their efficacy in strengthening the pelvic musculature, particularly in postmenopausal women [25]. This study reinforces these findings by showcasing the significant impact of physiotherapy on pelvic floor health when combined with HRT.

This study builds on the growing body of literature advocating for multimodal approaches to manage postmenopausal symptoms. The integration of physiotherapy with HRT offers a synergistic effect, addressing not only physical but also psychological and functional challenges faced by postmenopausal women. These findings underscore the importance of developing tailored, patient-centric interventions to maximize therapeutic outcomes.

CONCLUSION

The integration of physiotherapy with HRT proved to be highly effective in treating postmenopausal symptoms and improving quality of life. Participants experienced notable improvements in physical and psychological health metrics, confirming the benefits of a comprehensive treatment strategy that addresses both hormonal and physical aspects of postmenopausal care.

Future recommendations

Future research should explore the long-term effects of combined physiotherapy and HRT, including larger, more diverse populations, to validate these findings. Additionally, investigating the specific types of physiotherapy exercises that yield the most significant benefits could further optimize treatment protocols for postmenopausal women.

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AUTHORS CONTRIBUTIONS

All authors have contributed equally

CONFLICT OF INTERESTS

Declared none

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