Observational Study to Evaluate the Prevalence of Early Osteoarthritis (OA) in Knee among Women who were having Premature Menopause

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ABSTRACT

Aim & Objective: Knee osteoarthritis is a common phenomenon among women after menopause and it was hypothesized that hormonal factor play crucial role in it. The aim of this observational study is to evaluate the prevalence of knee osteoarthritis among women who were having premature menopause.

Material & Method: In this clinical retrospective observational study 145 women in whom symptoms of menopause occur before minimum 40 years of age and visited clinic with complains of knee osteoarthritis. Visual Analogue Scale (VAS) was used to measure the severity of the osteoarthritis. Data were collected in a predesigned format and were analysed by using computer software “Statistical Package for the Social Sciences” (SPSS) version 16.

Result: Among 145 patients who were included in the study 82 patients were reported with knee osteoarthritis developed within 1 year of premature menopause. As compare to rural area urban area were having more erratic treatment, but intervention of physiotherapy and regular medication was noted more in urban patients as compare to rural. Visual Analogue Scale (VAS) score was significantly high in both rural and urban patients. Awareness regarding the consequences of menopause was significantly low in both rural and urban patients.

Conclusion: This study concluded that severity of early knee osteoarthritis was higher among study population and lack of awareness was the main culprit for the severity. More patients’ awareness is required among aged women regarding consequences of premature menopause and physical exercise or physiotherapy to avoid occurrence or severity of osteoarthritis.

Keywords: Prevalence, Knee, Osteoarthritis, Menopause, Awareness, Physiotherapy.

INTRODUCTION

Knee osteoporosis is more common in women as compare to men. [1] It also documented in many studies during menopause, the incidence of both knee and hip osteoporosis is major health problem. [1-4] There is almost more than 3.5 fold increased resin of developing osteoporosis in women specially who were having premature menopause as compare to men with similar age. [5] In has also been documented that average life span of Indian women are 65 years where as it is 85 years for other developed countries. Thus, quality of life in Indian women are of major concern and we orthopedics are encounter of osteoporosis cases more frequently where patients are present with mild to severe osteoporosis pain. Knee pain is an imprecise marker of radiographic knee osteoarthritis which is partly dependent to extent of radiographic involvement. Similarly, radiographic knee OA is an imprecise guide to the likelihood that knee pain or disability will be present.

Osteoarthritis (OA) is a progressive degenerative joint disease that affects all structures of the joint. OA can affect all joints, but the most common sites are the knee, the hip and the hand. OA has a tremendous impact on the lives of working age adults and elderly causing pain and functional impairment and being the leading cause for joint replacement surgery.
Knee osteoarthritis is a common phenomenon among women after menopause and it was hypothesizes that hormonal factor play crucial role in it. The aim of this observational study is to evaluate the prevalence of knee osteoarthritis among women who were having premature menopause.

**MATERIAL & METHOD**

In this clinical retrospective observational study 145 women in whom symptoms of menopause occur before minimum 40 years of age and visited clinic with complains of knee osteoarthritis.

Both urban and rural patients were included in the study. Any patients who were under any hormonal therapy and patients who were denied to give consent for the study were excluded.

**RESULT**

Total participants of the study were 145. Demographic details of the participants were listed in table 1.

Among 145 patients who were included in the study 82 patients were reported with knee osteoarthritis developed within 1 year of premature menopause. Details were demonstrated in table 2.

As compare to rural area urban area were having more erratic treatment, but intervention of physiotherapy and regular medication was noted more in urban patients as compare to rural. Visual Analogue Scale (VAS) score was significantly high in both rural and urban patients (table 3)

**Table 1: Demographic details of participants**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Urban population (N=27)</th>
<th>Rural Population (N=118)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>38.1±4.2</td>
<td>37.4±3.8</td>
<td>0.781</td>
</tr>
<tr>
<td>No of patients having age of menopause &gt; 35 years (N)</td>
<td>5</td>
<td>32</td>
<td>0.821</td>
</tr>
<tr>
<td>Menopause due to medical reason (N)</td>
<td>9</td>
<td>35</td>
<td>0.936</td>
</tr>
<tr>
<td>Menopause due to surgical reason (N)</td>
<td>18</td>
<td>83</td>
<td>0.987</td>
</tr>
</tbody>
</table>

**Table 2: Onset of early and late knee OA among participants**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Urban</th>
<th>P Value</th>
<th>Rural</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset of early Knee OA after starting of menopause (Time gap in years)</td>
<td>1.1 ±0.4</td>
<td>1 ±0.2</td>
<td>0.038</td>
<td>1.3 ±0.2</td>
</tr>
<tr>
<td>Onset of late Knee OA after starting of menopause (Time gap in years)</td>
<td>6.3 ±1.1</td>
<td>6.1 ±0.8</td>
<td>0.082</td>
<td>7.3 ±1.1</td>
</tr>
</tbody>
</table>

**Table 3**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Urban population (N=27)</th>
<th>Rural Population (N=118)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAS score</td>
<td>5.86±1.4</td>
<td>6.24±0.94</td>
<td>0.014</td>
</tr>
</tbody>
</table>

VAS: Visual Analogue Scale.
Awareness regarding the consequences of menopause was significantly low in both rural and urban patients (table 4).

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Urban Medical (N=9)</th>
<th>Urban Surgical (N=18)</th>
<th>Rural Medical (N=35)</th>
<th>Rural Surgical (N=83)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness (%)</td>
<td>2 (22%)</td>
<td>3 (17%)</td>
<td>9 (26%)</td>
<td>14 (17%)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

In this study researcher has noticed that surgical cause is more predominant than the medical one in both rural and urban patients. It has been also noticed that onset of osteoarthritis in one are prominent even in premature menopausal women who are less than 35 years of age. This finding was also noticed in an Indian trial were less than 40 years aged premature menopausal women in both rural and urban areas were having similar early or late knee osteoarthritis. [7]

It has noticed that majority of patients with premature menopause were expressing with onset of osteoporosis symptoms within 1 year irrespective of cause of menopause whether because of surgical or medical. Similar result was also noticed in few Indian and international studies. [8,9]

As compare to rural area urban area were having more erratic treatment, but intervention of physiotherapy and regular medication was noted more in urban patients as compare to rural. Visual Analogue Scale (VAS) score was significantly high in both rural and urban patients.

Estrogen imbalance was the main consequences of premature menopause. [10,11] It has been also established in few studies that estrogen plays an important role towards developing of new onset of osteoporosis. [12-15]

**CONCLUSION**

This study concluded that severity of early knee osteoarthritis was higher among study population and lack of awareness was the main culprit for the severity. More patients’ awareness is required among aged women regarding consequences of premature menopause and physical exercise or physiotherapy to avoid occurrence or severity of osteoarthritis.

**REFERENCE**

MD. Ekram. Observational study to evaluate the prevalence of early osteoarthritis (OA) in knee among women who were having premature menopause


How to cite this article: Ekram MD. Observational study to evaluate the Prevalence of early Osteoarthritis (OA) in knee among women who were having premature menopause. International Journal of Research and Review. 2020; 7(8): 425-428.

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