



## ASSOCIATION OF WAIST –HIP RATIO AND SEVERITY OF OSTEOARTHRITIS OF KNEE IN FEMALES

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**ABSTRACT** **BACKGROUND:** Osteoarthritis is a disabling degenerative joint disorder characterized by pain, decrease mobility and negative impact on quality of life. Osteoarthritis pathogenesis relates to both excessive joint loading and altered biomechanical patterns together with hormonal and cytokine deregulation.

Obesity is associated with an increase incidence and progression of osteoarthritis, to rate of joint replacements as well as operative complications.

**AIM:** To Assess the relation between Waist hip ratio and severity of chronic (>3months) Osteoarthritis knee in females of age group 30 to 50 years, based on Ahlback radiological Classification.

### MATERIALS AND METHOD

The study was conducted at the Department of Physical Medicine and Rehabilitation, Govt. Medical College, Kottayam, a tertiary care centre in Kerala. 100 female patients between the age group 30 to 50 with symptomatic OA knee duration more than 3 months, who visited the department were included in the study.

**KEYWORDS :** Osteoarthritis, Obesity, waist hip ratio, Ahlback grading.

### INCLUSION CRITERIA

1. Females of age group 30 to 50 fulfilling ACR criteria for osteoarthritis knee.
2. Duration of pain more than 3 months.

### EXCLUSION CRITERIA

Already diagnosed cases of chronic knee pain due to following

1. Rheumatoid arthritis and other inflammatory arthropathies.
2. Pre existing mechanical deformities of knee
3. Pathological genu varus / valgus
4. Radiculopathy
5. Referred pain from another joint
6. Entrapment neuropathy
7. Vascular disease (claudication)
8. Septic arthritis.

### SAMPLING TECHNIQUE

Study was done in female patients with Osteoarthritis knee in age group 30 to 50, with knee pain more than 3 months. General details of the subjects and history of comorbid conditions or endocrine defect, its duration were noted. Elaborate history of knee pain with specific information on associated symptoms like morning stiffness, swelling, locking, were recorded. Recordal assessment of pain obtained on visual analogue scale. General physical examination, anthropometric measurements, BMI calculation, body fat percentage measurement using body fat monitor. Waist and hip circumference measured and waist hip ratio were calculated. Radiograph of knee taken in all cases and graded using Ahlback classification.

### STATISCAL ANALYSIS

The data collected were coded and entered in Microsoft Office Excel and analysed using SPSS Version 16.0. Data summary described as means and standard deviation for normally distributed quantitative variables and as counts and percentages for qualitative variable. The Chi-square test used to compare categorical variables. Non parametric tests will used for qualitative variables. The level of significance will be taken as a 'p' value of <0.05 and the level of highly significant as <0.01.

### RESULTS:

Out of 100 patients participated in the study, all complaining of knee pain and diagnosed as OA knee based on ACR criteria, 78% of the patients had WH Ratio > 0.85 and 22% below 0.85. When only those with more than the average WH ratio (>0.85) were compared, 13.7%

patients have Ahlback grading 1and 86.3% patients have Ahlback grading more than 1. It was found to be statistically insignificant with a Chi square of 0.786 and P value 0.375.

### CONCLUSION:

In the study, most of the population (78) are obese. So there is an increase incidence of OA knee in obese females. But the study shows no significant correlation between increase in Waist hip ratio and radiological severity of Osteoarthritis knee in the study population.

### LIMITATION:

Since the study population consists of a particular gender of the general population and age group limited to 50, the results are inconclusive.

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