Harsukh Educational Charitable Society
International Journal of Community Health and Medical Research
Journal home page: www.ijchmr.com doi: 10.21276/ijchmr

ISSN E: 2457-0117 **ISSN P:**2581-5040 **Index Copernicus** ICV 2018=62.61

Original Research

A Comparative Evaluation Of Oxaceprol And Diacerein In Osteoarthritis Patients

Privy Varshney[1] Arshad Hasan[2]

[1]Assistant Professor, [2]Associate Professor, Department Of Pharmacology, Rama Medical College Hapur..

ABSTRACT
Background: Osteoarthritis is a slowly progressive disease of unknown cause. The present study was conducted to compare oxaceprol and diacerein in osteoarthritis patients. **Materials & Methods:** The present study was conducted on 84 cases of both genders who were diagnosed as American College of Rheumatology (ACR) guidelines and graded radiologically as grade I & II osteoarthritis of the knee joint. They were divided into 2 groups of 41 each. Group I patents were prescribed tab. Oxaceprol 200 mg twice daily for 3 months and group 2, patients was given tab. diacerein 50 mg twice daily for 3 months. Patients were subjected to evaluation of complete blood counts, random blood sugar, renal function test, liver function test and lipid profile. VAS, WOMAC and LEQUESNE score was calculated and compared. **Results:** Each group had 41 patients. Systolic blood pressure and BMI in both groups found to be significant ($P< 0.05$) whereas diastolic blood pressure, weight and height was non- significant ($P> 0.05$). VAS score before treatment was 6.12 and 7.42 in group I and II respectively which decreased to 4.06 and 4.12 afterwards. WOMAC score was 42.8 and 48.1 before treatment which decreased to 34.9 and 38.4 afterwards. LEQUESNE score decreased from 6.73 and 6.92 to 4.32 and 4.12 in group I and II respectively. The difference found to be significant ($P< 0.05$). **Conclusion:** Oxaceprol and Diacerein may use with safety and provide effective results. Both drugs were capable in patients with osteoarthritis.

Key words: Diacerein, Oxaceprol, Osteoarthritis

Corresponding author: Dr. **Arshad Hasan ,** [2]Associate Professor, Department Of Pharmacology, RAMA Medical College Hapur.

This article may be cited as:, **Varshney P, Hasan A** A Comparative Evaluation Of Oxaceprol And Diacerein In Osteoarthritis Patients .HECS Int J Comm Health Med Res 2019; 5(2):14-16

INTRODUCTION

Osteoarthritis (OA) is a slowly progressive disease of unknown cause and unclear pathogenesis. The disease appears to initiate in the cartilage and changes in this tissue are increasingly severe with advancing age. In OA, both mechanical and enzymatic factors are involved in cartilage matrix degradation. In addition to cartilage, IL-1 affects the function of other articular tissues.[1]It is the most common joint disease and is the most common cause of locomotor disability in the elderly. Its prevalence in India is 22% to 39%. Osteoarthritis is not an predictable consequence of aging; instead, aging increases the risk of osteoarthritis and advanced osteoarthritis may also occur in many young people in early 20's.[2]

The prevalence of osteoarthritis in Indian population is about 4% in urban and 6% in rural areas. Previously thought to be a normal consequence of aging, it is now realized that osteoarthritis results from a complex interplay of multiple other factors such as genetic predisposition, mechanical forces, local inflammation, and cellular and biochemical processes.[3]

There are various treatment modalities and oxaceprol and diacerein are being used for a long time. Oxaceprol has been recently introduced into India. Oxaceprol, a derivative of hydroxyproline ([4R]-1-acetyl-4-hydroxy-L-proline), has been used for the treatment of degenerative joint disease, especially in Europe. Diacerein is an anthraquinone derivative and works by blocking the actions of interleukin-1 beta, a protein involved in the inflammation and destruction of cartilage that play a role in the development of symptoms of degenerative joint diseases such as osteoarthritis.[4] The present study was conducted to compare oxaceprol and diacerein in osteoarthritis patients.

MATERIALS & METHODS

The present study was conducted in the department of Pharmacology. It comprised of 84 cases of both genders who were diagnosed as American College of Rheumatology (ACR) guidelines and graded radiologically as grade I & II osteoarthritis of the knee joint based on Kellgren and Lawrence classification..

Ethical clearance was obtained from institutional ethical committee. All patients were informed regarding the purpose of the study and written consent was obtained.

General information such as name, age, gender etc. was recorded. Patients were examined clinically and radiological exercise was conducted. They were divided into 2 groups of 41 each. Group I patents were prescribed tab. Oxaceprol 200 mg twice daily for 3 months and group 2, patients was given tab. diacerein 50 mg twice daily for 3 months.

Patients were subjected to evaluation of complete blood counts, random blood sugar, renal function test, liver function test and lipid profile. Results thus obtained were subjected to statistical analysis using SPSS version 21.0. Chi- square test and Pearson's correlation was determined. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 84

Groups	Group I (Oxaceprol)	Group II (diacerein)
Number	41	41

Table I shows that each group had 41 patients.

Parameters	**Group I**	**Group II**	**P value**
Pulse rate (per min)	72.4	78.6	0.52
SBP (mmHg)	124.8	132.4	0.01
DBP (mmHg)	74.2	78.4	0.74
Weight (Kg)	62.4	64.6	0.44
Height (cm)	152.4	150.8	0.78
BMI (Kg/m$^{2)}$	24.60	28.12	0.02

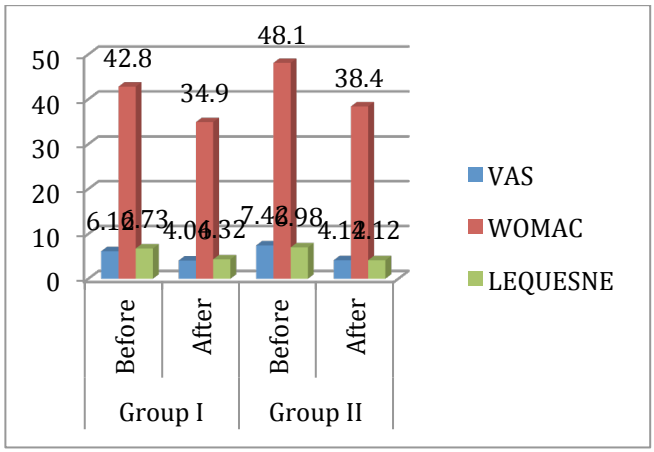
Table II shows that systolic blood pressure and BMI in both groups found to be significant (P< 0.05) whereas diastolic blood pressure, weight and height was non- significant (P> 0.05).

Table III VAS scale, WOMAC scale and LEQUESNE Scale in both groups

Scale	**Group I**		**Group II**		**P value**
	Before	After	Before	After	
VAS	6.12	4.06	7.42	4.12	0.05
WOMAC	42.8	34.9	48.1	38.4	0.01
LEQUESNE	6.73	4.32	6.98	4.12	0.02

Table III shows that VAS score before treatment was 6.12 and 7.42 in group I and II respectively which decreased to 4.06 and 4.12 afterwards. WOMAC score was 42.8 and 48.1 before treatment which decreased to 34.9 and 38.4 afterwards. LEQUESNE score decreased from 6.73 and 6.92 to 4.32 and 4.12 in group I and II respectively. The difference found to be significant (P< 0.05).

Graph I VAS scale, WOMAC scale and LEQUESNE Scale in both groups



DISCUSSION

The exact incidence and prevalence of osteoarthritis is difficult to determine because the clinical syndrome of osteoarthritis does not always correspond with the structural changes of osteoarthritis. It differs in different racial and ethnic groups. Both radiographic hip and hand osteoarthritis were much less frequent among Chinese in the Beijing Osteoarthritis Study than in whites in the Framingham Study. Oxaceprol was introduced about 30 years ago and is used widely in France and Germany for the management of osteoarthritis.[5]

The visual analogue scale (VAS) is a horizontal line, typically 10 cm in length, anchored by textual descriptors and/or pictures at each end. An endpoint descriptor such as 'no pain' (a score of 0) is marked at the left end, and 'worst pain imaginable' or 'worst possible pain' (a score of 10) is marked at the right end.[6]

Lequesne scale used to assess the effectiveness of therapeutic interventions. It is a measure of 3 different parameters (I) Pain or Discomfort, (II) Maximum Distance Walked and (III) Activities of Daily Living. Each parameter has different points with minimum 0 to maximum of 8, and then total points for all parameter were taken as index if severity scores. The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is a widely used, proprietary set of standardized questions used by health professionals to evaluate the condition of osteoarthritis patients with pain, stiffness, and physical functioning of the joints.[7] The present study was conducted to compare oxaceprol and diacerein in osteoarthritis patients.

We found that systolic blood pressure and BMI in both groups found to be significant (P< 0.05) whereas diastolic blood pressure, weight and height was non- significant (P> 0.05). We observed that VAS score before treatment was 6.12 and 7.42 in group I and II respectively which decreased to 4.06 and 4.12 afterwards. WOMAC score was 42.8 and 48.1 before treatment which decreased to 34.9 and 38.4 afterwards. LEQUESNE score decreased from 6.73 and 6.92 to 4.32 and 4.12 in group I and II respectively.

Krüger et al[8] in their study efficacy was assessed clinically by WOMAC scale during their follow up at three months. Safety was evaluated clinically considering adverse effects and by complete haemogram & blood biochemistry. In diacerein-group, WOMAC score (mean ± S.D.) improved from 48.77± 18.17 to 29.40 ± 19.94 and in oxaceprol group from 42.59 ± 19.49 to 26.58 ± 16.83. No adverse effect was reported in any group.

Shah et al[9] found that the VAS Scale was reduced from 7.321 ± 0.9449 to 4.75 ± 1.146 (Mean± SD) for Diacerein and 6.821 ±1.1564 to 4.321±1.1564 for Oxaceprol. The Lequesne scale was reduced from 6.0±1.054 to 4.21±1.0923 for Diacerein and 6.0±0.8819 to 3.839±1.0475 for Oxaceprol. Both the results were found to be statistically significant. Difference in VAS and Lequesne scale between the Diacerein and Oxaceprol were 0.757 and 0.099 respectively There was not any adverse event reported.

Satyendra et al[10] compared oxaceprol (200 mg thrice daily) with diclofenac (25 mg thrice daily) over 3 weeks in a multicenter, randomized, double-blind, study in Germany. Joint function, evaluated by Lequesne's indices, improved clinically in both treatment arms. In both groups VAS score for pain was reduced nearly 50%, joint mobility improved nearly 60% and pain-free walking period more than doubled.

CONCLUSION

Both drugs were capable in patients with osteoarthritis. Oxaceprol and Diacerein may use with safety and provide effective results.

REFERENCES

1. Johanne Martel, Lukas Wildi, Jean Pelletier, “Future therapeutics for osteoarthritis” Bone. 2012; 51: 297–311.
2. Michael Yaron, Idit ShirazI, “Anti-interleukin-1 effects of diacerein and rhein in human osteoarthritic synovial tissue and cartilage cultures” Osteoarthritis and Cartilage. 1999; 7: 272–280.
3. Yuqing Zhang, Joanne Jordan, “Epidemiology of Osteoarthritis” Clin Geriatr Med. 2010; 26(3): 355–369.
4. Ashish Prasad, Manish Mahajan and Alok Chaturvedi, “ Oxaceprol in the Management of Osteoarthritis”, The Indian Practitioner. 2012, 65(10), 631-634.
5. Annil Mahajan, Kulbir Singh, Vishal Tandon, Sudesh Kumar and Hardeep Kumar, “Diacerein: A New Symptomatic Slow Acting Drug for Osteoarthritis”, JK Science. 2006; 8(3): 173-175.
6. Dilip Kumar Renapurkar and Shobana Mathur, “Evaluation of Efficacy and Safety of Diacerein in Osteoarthritis of Knee Joint”, International Journal of Pharma and Bio Sciences. 2010; 1(3): 1-12.
7. WOMAC Arthritic Index. Available at: https://www.physio-pedia.com /WOMAC_ Osteoarthritis_Index # Method_of_Use (accessed on 1st Jan 2016).
8. Krüger K, Klasser M, Mössinger J, Becker U. Oxaceprol – a randomized placebo- controlled clinical study in osteoarthritis with a non-conventional non- steroidal anti-inflammatory drug. Clinical and Experimental Rheumatology. 2007;25:29-34.
9. J Shah, N Mirza, V Patel; A Comparative study for Safety and Efficacy of Oxaceprol and Diacerein in Osteoarthritis of Knee Joints; PharmaTutor; 2014; 2(6); 108-114.
10. Satyendra Sharad, Dinesh Kansal, Vipin Sharma, Parveen Sharma. To compare the safety and efficacy of diacerein and oxaceprol in the management of grade I & II osteoarthritis of knee Indian Journal of Pharmacy and Pharmacology 2018;5(3):105-109.