



## STUDY OF EFFICACY OF SULPHASALAZINE VS ACECLOFENAC IN PAIN MANAGEMENT OF OSTEOARTHRITIS

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### ABSTRACT

**Aim:** To study the efficacy of Sulfasalazine v/s Aceclofenac in pain management of Osteoarthritis of Knee. **Objective:** Comparison and clinical evaluation of efficacy of both sulfasalazine (SSZ) vs Aceclofenac in Osteoarthritis of Knee by patient's symptoms (pain scale-visual analogue scale). **Methodology:** A Randomized Prospective study will be carried out in Osteoarthritis patients to evaluate the efficacy of Sulfasalazine vs Aceclofenac in the department of Orthopaedics, Durgabai Deshmukh Hospital, a 300 bedded multispecialty hospital from September 2017-March 2018. **Results:** Among the total number of Patients (60), Aceclofenac is given in 45%, Sulfasalazine is given in 55% of the Patients. Sulfasalazine is effective in 72%, and Aceclofenac is effective in 27% of Patients with Osteoarthritis of Knee. **CONCLUSION:** From this study we have concluded that Sulfasalazine is effective than Aceclofenac with respect to pain relief (VAS) and safety among patients with Osteoarthritis of the knee. Therefore, we think that Sulfasalazine is a safe and effective medicine that would provide effective pain management and improved quality of life in patients with OA of the knee

### INTRODUCTION

Osteoarthritis (OA) is cartilage failure resulting in joint pain, loss of joint functions. Osteoarthritis of knee that involuntary forces have major effect on initiation and progression. Knee OA is the most frequent disease of knee especially in the middle to old age. The most frequent findings in the history and physical assessment of the patients with knee OA are mechanical knee pain, gelling knee tenderness, crepitus on knee movement, bony softness and enlargement in the joint line. During the flare up of Osteoarthritis, knee can demonstrate swelling due to joint effusion called "Hydrarthrosis" is a mechanical type of synovial fluid. It is regularly a cold effusion and from time to time it accompanied by warmth and mild synovitis or synovial thickening, but moderate to significant knee synovitis and

Hot or red knee cannot be seen during its OA flare up.<sup>[1]</sup>

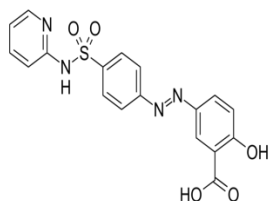
**Factors that place the people at greater risk for knee OA are:**

- middle to old ages,
- obesity,
- frequent knee bending activity,
- climbing the stairs frequently,
- squatting or deep knee bending for lengthen time
- Lifting or moving heavy objects frequently.

There is no significant positive finding in biochemistry tests of the patients with knee OA. Plain radiography has less sensitivity regarding knee OA during early phase of the disease. But MRI of knee is the most sensitive imaging during this early phase. Among X-Ray findings, osteophyte has the most specificity for OA and presence of

cartilage defects. Bone Marrow Edema (BME) parallely is compatible MRI findings for osteoarthritis.<sup>[1]</sup>

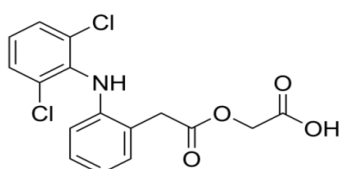
### Drugs in present study Sulfasalazine



#### Mechanism of action:

Sulfasalazine, a prodrug, is cleaved by bacteria in the colon into sulfapyridine and 5-amino salicylic acid. It is believed that the sulfapyridine moiety is responsible for the agents anti rheumatic properties, although the exact mechanism of action is not known. Once the colonic bacteria have cleaved sulfasalazine, sulfapyridine and 5-amino salicylic acid are absorbed rapidly from the gastrointestinal tract. Sulfapyridine distributes rapidly through out the body, but higher concentrations are found in certain tissues such as serous fluid, liver and intestines. Both sulfasalazine and its metabolites are excreted in the urine.<sup>[2]</sup>

#### Aceclofenac



**Mechanism of action:** Through COX-2 inhibition, aceclofenac down-regulates the production of various inflammatory mediators including prostaglandins E2 (PGE2), IL-1BETA, and TNF from the arachidonic acid (AA) pathway. Inhibition of IL-6 is thought to be mediated by diclofenac converted from aceclofenac.<sup>[3]</sup>

**METHODOLOGY (MATERIALS AND METHODS):** The study will be conducted in Department of Orthopedics, Durgabai Deshmukh Hospital; a 300 bedded multi-specialty hospital. This study is proposed to be conducted for 6 months. This is a Randomized Prospective Observational Study and the sample size of this study is 60 patients (N). This study was approved by

Ethics committee of durgabhai deshmukh hospital and research center, Hyderabad. The main tools of this study includes patient case reports, Visual analogue scale, Laboratory investigation Reports.

**RESULTS AND DISCUSSION:** In patients with Osteoarthritis of Knee when compared to others, age group between 60-65, 65-70 (25%) are found to be more and 40-45 (8%) are found to be less effected by Osteoarthritis.

#### SUMMARY:

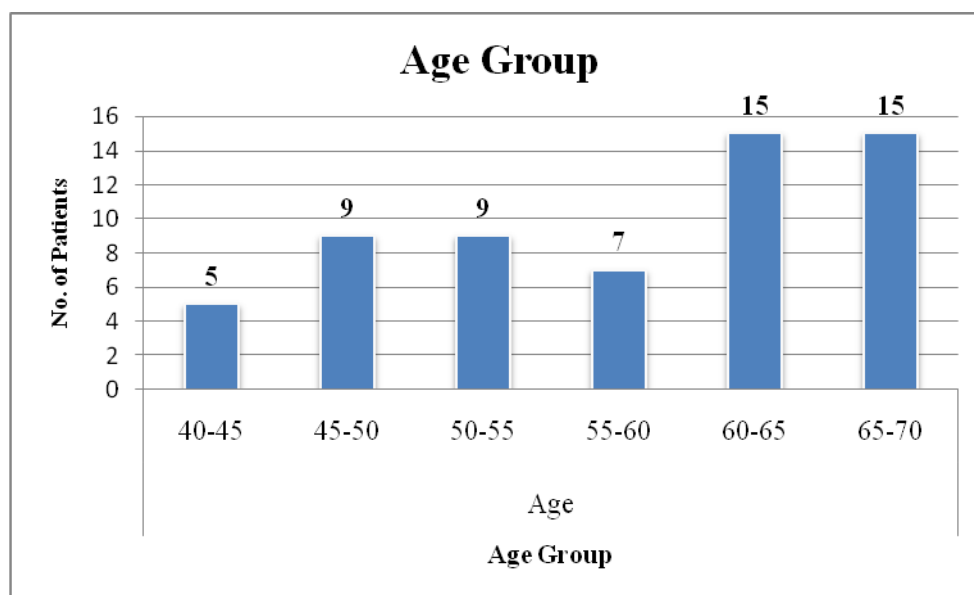
The efficacy of Aceclofenac vs. Sulfasalazine among 60 patients with OA of the knee, showed that although there were slightly significant differences between the two drugs with regard to the VAS, osteoarthritis severity index after two months of administration, Sulfasalazine facilitated improvement in reduction in pain than aceclofenac with regard to the VAS. These results of the 6 months of clinical trial involving patients with knee OA confirm that the sulfasalazine is more effective than aceclofenac in terms of efficacy, symptomatic relief. In the patients, among 28 patients 3 patients complain gastritis, 11 patients complaint that pain is not reduced and Sulfasalazine is prescribed in 2<sup>nd</sup> review. In patients with Osteoarthritis of Knee when compared to others, age group between 60-65, 65-70 (25%) are found to be more and 40-45 (8%) are found to be less effected by Osteoarthritis. Out of 60 Patients with OA of Knee, Male Patients were 17(28%) and Females were 43(72%).

#### **Efficacy of Aceclofenac vs Sulfasalazine in Osteoarthritis of Knee in 60 Patients**

Aceclofenac is prescribed to 30 patients in which 19 patients shown to reduced pain. Aceclofenac is ineffective in 11 patients in their 1<sup>st</sup> review; as a result they were shifted to sulfasalazine in their 2<sup>nd</sup> review. Sulfasalazine is prescribed to 30 Patients in which it has shown to reduce pain in 30 patients and in additional 11 patients who have changed drug from aceclofenac to sulfasalazine.

**Table 5.1 Ages**

Age in Years	Frequency	Percentage %
40-45	5	8%
45-50	9	15%
50-55	9	15%
55-60	7	12%
60-65	15	25%
65-70	15	25%

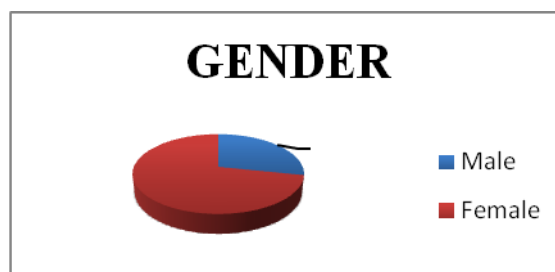


**FIGURE 5.1 - Age in years of the Patients.**

- In patients with Osteoarthritis of Knee when compared to others, age group between 60-65, 65-70 (25%) are found to be more and 40-45 (8%) are found to be less effected by Osteoarthritis.

**Table 5.2 - GENDERS:**

GENDER	FREQUENCY	PERCENTAGE %
Male	17	28
Female	43	72

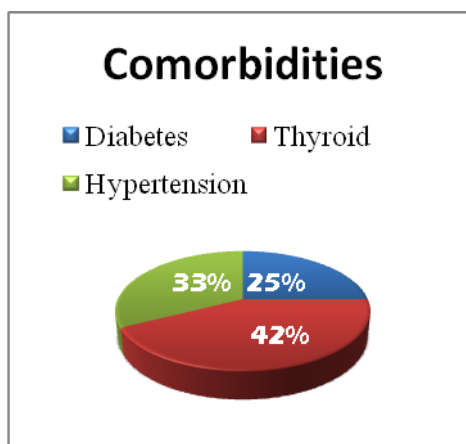


**Figure 5.2 Genders of the Patients**

Out of 60 Patients with OA of Knee, Male Patients were 17(28%) and Females were 53(72%).

### 5.3 COMORBIDITIES:

CO-MORBIDITIES	FREQUENCY	PERCENTAGE %
Diabetes	10	25
Thyroid	17	42
Hypertension	13	33

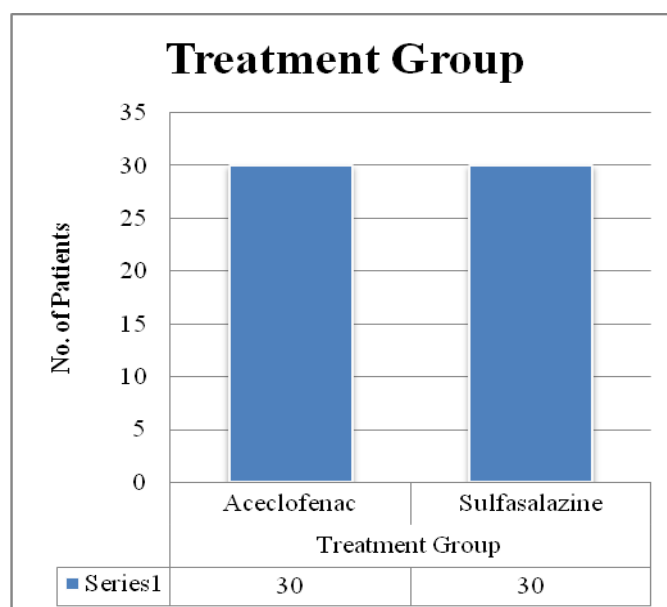


- Out of 60 Patients with OA of Knee, Patients with risk factor Co-morbidities, Diabetes 10(25%), Thyroid 17(42%), and Hypertension 13 (33%).

**Figure 5.3 Co-morbidities of the Patients**

### 5.4 TREATMENT GROUP:

DRUG	FREQUENCY	PERCENTAGE %
Aceclofenac	30	50
Sulfasalazine	30	50



**Figure 5.4 Treatment Group**

Out of 60 Patients with OA of Knee, total number of patients prescribed with Aceclofenac 30 (50%), Sulfasalazine 30 (50%).

**5.5 EFFICACY OF ACECLOFENAC:**

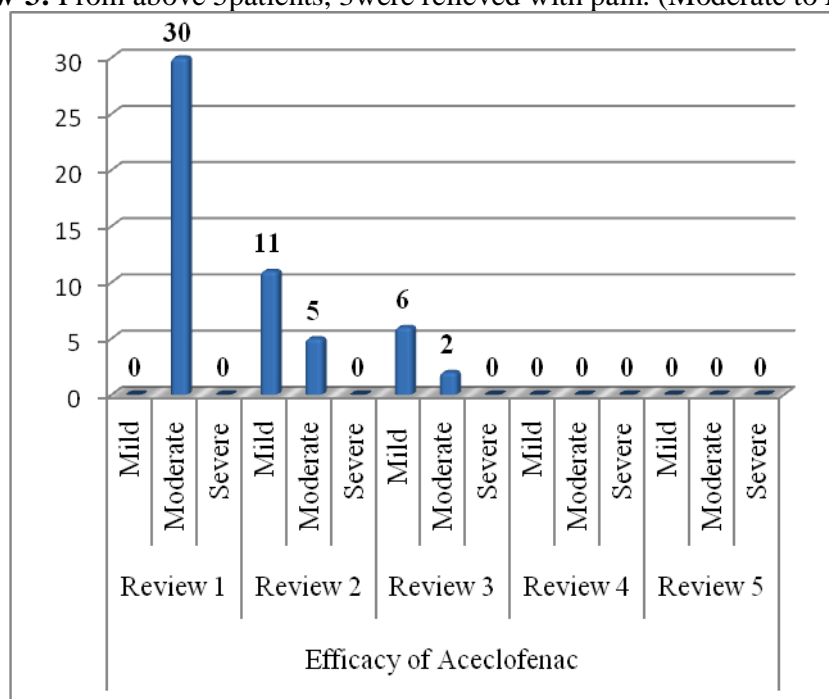
<b>EFFICACY OF ACECLOFENAC</b>	<b>REVIEWS</b>	<b>VAS</b>	<b>FREQUENCY</b>
	REVIEW 1	Mild	0
		Moderate	30
		Severe	0
	REVIEW 2	Mild	11
		Moderate	5
		Severe	0
	REVIEW 3	Mild	6
		Moderate	2
		Severe	0
	REVIEW 4	Mild	0
		Moderate	0
		Severe	0
	REVIEW 5	Mild	0
		Moderate	0
Severe		0	

Aceclofenac is prescribed to 30 patients,

**Review -1:** 30 patients were complaining with Moderate Pain

**Review-2:**

- 11patients relieved with pain (Moderate to Mild).
- 5patients pain was slightly reduced (Moderate).
- 11 patients complaining of no symptomatic relief, change of drug from aceclofenac to sulfasalazine is advised
- **Review-3:** From above 5patients, 3were relieved with pain. (Moderate to Mild).



**5.6 - EFFICACY OF SULFASALAZINE:**

<b>EFFICACY OF SULFASALAZINE</b>	<b>REVIEWS</b>	<b>VAS</b>	<b>FRQUENCY</b>
	REVIEW 1	Mild	0
		Moderate	30
		Severe	0
	REVIEW 2	Mild	14
		Moderate	14
		Severe	0
	REVIEW 3	Mild	15
		Moderate	3
		Severe	0
	REVIEW 4	Mild	5
		Moderate	1
		Severe	0
	REVIEW 5	Mild	3
		Moderate	0
Severe		0	

Sulfasalazine is prescribed to 32 patients,

**Review -1:** 30patients were complaining with Moderate Pain .

**Review-2:**

- 14 patients relieved with pain (Moderate to Mild).
- Patients with Moderate Pain 14.
- 11 patients were added to sulfasalazine drug from aceclofenac drug with Moderate Pain.

**Review-3:**15 Patients relieved with Pain (Moderate to Mild).

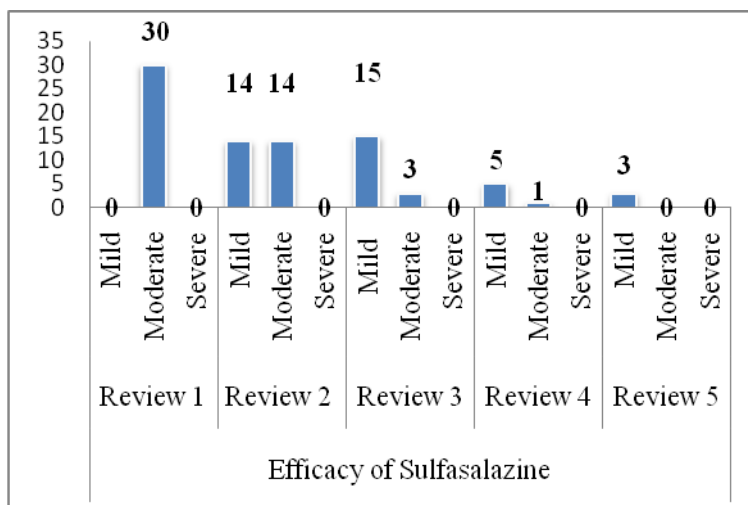
- Patients with Moderate Pain 3.

**Review-4:**

- 5 Patients relieved with Pain (Mild).
- Moderate 1 patient.

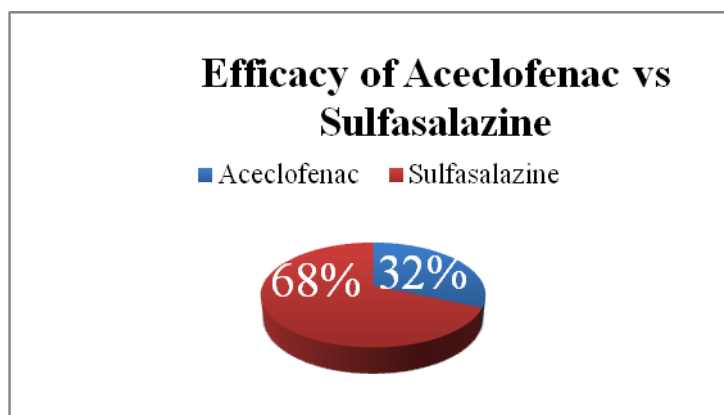
**Review-5:**

- Mild 3 patients.



### 5.7 - EFFICACY OF ACECLOFENAC VS. SULFASALAZINE IN OA OF KNEE

DRUG	FREQUENCY	PERCENTAGE %
ACECLOFENAC	19	32
SULFASALAZINE	41	68



#### 5.7 Efficacy of Aceclofenac vs Sulfasalazine in OA of Knee

#### CONCLUSION

This study showed that Sulfasalazine is effective than Aceclofenac with respect to pain relief (VAS) and safety among patients with Osteoarthritis of the knee. Therefore, we conclude that Sulfasalazine is a safe and effective medicine than Aceclofenac that would provide effective pain management and improved quality of life in patients with Osteoarthritis of the knee.

**Ethics and consent:** The entire study was conducted according to the AHA/ASA guidelines. All the relevant and necessary data was collected from in patient records, laboratory reports, prescriptions and by interviewing the patients.

**Conflicts of interest:** - None-

#### REFERENCES:

1. Iraj Salehi-Abari (2016), 2016 ACR Revised criteria for early diagnosis of knee Osteoarthritis Autoimmune Dis ther Approaches 3:118.

2. Joseph T.Dipiro, Robert L.Talbert, Gary C.Yee, Gary R.Matzke, Barbara G.Wells, L.Michael Posey, Pharmacotherapy, a Pathophysiologic Approach, 7,1513.
3. BorgdenRN, Wiseman LR: Aceclofenac. A review of pharmacodynamic properties, therapeutic potential in treatment of rheumatic disorders in pain management.Drugs. 1996 Jul; 52(1):113-24.
4. Parvati B. Patel, Department of Pharmacology, GMERS Medical College, Eur J Rheumatol. 2017 Mar; 4(1): 11–18.
5. Pareek A1, Chandurkaar N, Sharma VD, Desai M, Kini S, Bartakke G .A randomized, multicentric, comparative evaluation of aceclofenac-paracetamol combination with aceclofenac alone in Indian patients with osteoarthritis flare-up, Expert Opin Pharmacother.2009 Apr;10(5):727-35.
6. Young-Wan Moon, MD, Seung-Baik Kang, MD, Tae-Kyun Kim, MD, Efficacy and Safety of Aceclofenac Controlled Release in Patients with Knee Osteoarthritis: A 4-week,

- Multicenter, Randomized, Comparative Clinical Study, Knee Surg Relat Res. 2014 Mar; 26(1): 33–42.
7. Pareek A, Chandanwale AS, Oak J, Jain UK, Kapoor S. Efficacy and safety of aceclofenac in treatment of osteoarthritis: randomized double-blind comparative clinical trial vs diclofenac: Indian experience. *Curr Med Res Opin.* 2006; 22:977–988.
  8. Kellgren Jh, Lawrence JS, Radiological assessment in osteoarthritis, *Ann Rheum Dis.* 1957 Dec; 16(4):494-502.