



## Diagnosis and Management Pattern of Lateral Epicondylitis in a Tertiary Care Center

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### ABSTRACT

**Introduction:** Lateral Epicondylitis has been found to be the second most frequently diagnosed musculoskeletal disorder. A wide range of symptomatic treatments are available such as use of anti-inflammatory analgesic drugs, steroids, physiotherapy. This study aims to know about the diagnosis, prescription pattern and current practice on management of tennis elbow in Nepal.

**Methods:** This is a hospital based observational study carried out at Bir Hospital, Kathmandu, Nepal. Patients diagnosed with tennis elbow were purposively selected through prospective sampling technique from Orthopedic Department. Questionnaire and patient medication files were used as tools for data collection.

**Results:** A total of 97 patients were found to be suffering from tennis elbow affecting mostly 41-50 years of age group and seen mostly in female (62%). Further, it was found that housewives (31%) were mostly affected. Diagnosis of tennis elbow was done commonly by clinical evaluation (61%) and X-ray (39%). Both Pharmacological and Non-Pharmacological approaches were in practice. Pharmacological treatment include NSAIDS (59% Aceclofenac, 19% Naproxen, 18% Indomethacin, 16% Diclofenac, 6% Piroxicam) and Steroids (23% methylprednisolone acetate and 21% oral prednisolone). Non-Pharmacological treatment was done by lifestyle modification (100%), 78% application of heat, 63% use of tennis elbow band, 29% exercise and 28% physiotherapy. Surgical intervention (3%) was also done when the conservative management failed.

**Conclusion:** There is professional risk of tennis elbow for housewives, farmers and shopkeepers in context of Nepal. Only one treatment approach is not effective in management of tennis elbow for long term effect.

**Keywords:** lateral epicondylitis; NSAIDS; physiotherapy; steroid; tennis elbow.

### INTRODUCTION

Tennis elbow (Lateral Epicondylitis) has been found to be the second most frequently diagnosed musculoskeletal disorder affecting about 1-3% of the population.<sup>1-3</sup> On average, a typical episode of lateral epicondylitis (LE) lasts for 6-24 months. For women, the incidence increase up to 10% between the ages of 42 and 46

years. The causes of tennis elbow are overuse of forearm, minor trauma, weight lifting etc. Previously,

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the disease was found in athletes especially in tennis players. It is also known to affect painters, plumbers, carpenters, drivers.<sup>4</sup>

A wide range of symptomatic treatments are available such as use of anti-inflammatory analgesic drugs, steroids injection, physiotherapy, exercise etc.<sup>4</sup> Up to 30% of all patients are referred to physiotherapy.<sup>5</sup> There is no consensus on the most efficacious management of LE especially for long term outcomes.<sup>6</sup>

This study helps to know about the diagnosis, prescription pattern and current practice on management of tennis elbow in Nepal.

**METHODS**

This was a hospital based observational study, carried out over three months period from October, 2014 to December, 2014 at Bir Hospital, Kathmandu, Nepal. The patients diagnosed with tennis elbow were purposively selected from Orthopedics Department of Bir Hospital. Prospective sampling method was adopted. Institutional consent from the hospital was taken before data collection. The demographic details of the patients were recorded. Questionnaire and patient medication record file was used as tools for data collection. The obtained report results from the hospital were entered into Statistical Package for Social Science (SPSS) 21 version and Microsoft Excel and necessary analysis was made.

**RESULTS**

Overall, 97 patients were found to be suffered from tennis elbow. It was found that tennis elbow is more common in female (62%) than in male (38%). Mean age of patient was found to be 44.44 ± 11.39 years. The highest incidence was seen in age group 41-50 years (35%) followed by 29% in 31-40 years, 14.4% in 51-60 years, 10.3% in 21-30 years, 6.18% in 61-70 years and 4.12% among age group 71-80 years (Figure 1).

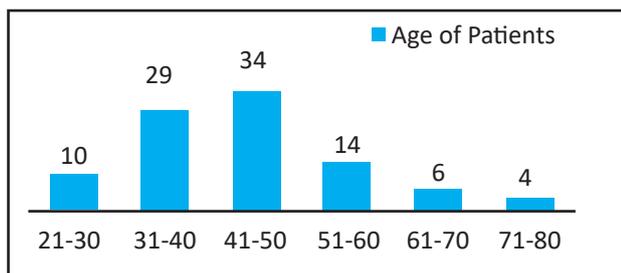


Figure 1. Age based analysis.

Looking at profession, the highest occurrence of

tennis elbow was seen in housewife i.e. 32% followed by farmer (19.6%), shopkeeper (16.5%), teacher (11%), carpenter (4%) and others (16.5%). All these professions were found to be the occupational risk factors of tennis elbow.

Different laboratory tests (32.98% blood glucose test, 23.7% uric acid test and 23.7% both sugar and uric acid test) were performed which do not have any role in diagnosis of tennis elbow but it was done to know the pathological condition of patients and confirm whether the pain is due to tennis elbow disorder or due to elevation of uric acid level. Diagnosis of tennis elbow was done commonly by clinical evaluation (61%) but in certain cases X-ray (39%) was performed.

According to this study, the mean duration of persistent of symptoms was 10.94 ± 12.88 weeks. Symptoms were seen since 1 week, 2-4 weeks and more than 4 weeks in 41%, 47% and 12% respectively. Further, the patients had come with different level of severity of pain at presentation. 59% came with moderate pain, 28% with mild pain and 13% with chronic pain (Figure 2). It was found that tennis elbow was commonly seen in right hand (58%). However 9% patients also came with complain of pain in both elbow.

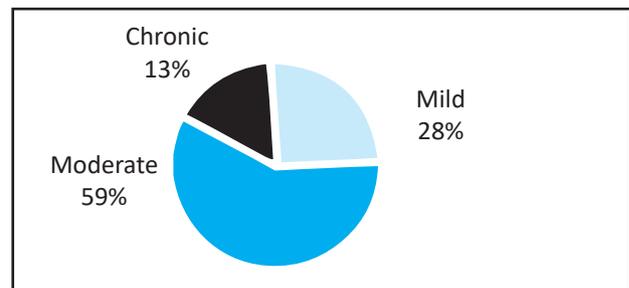


Figure 2. Severity of pain at presentation.

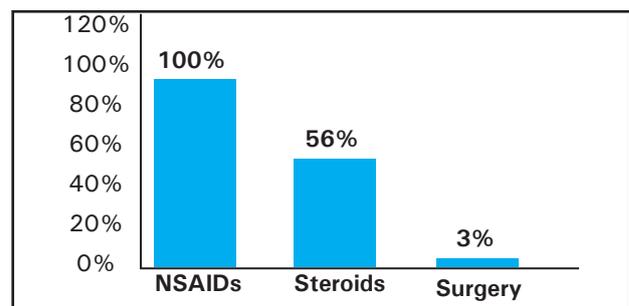


Figure 3. Pharmacological management of tennis elbow.

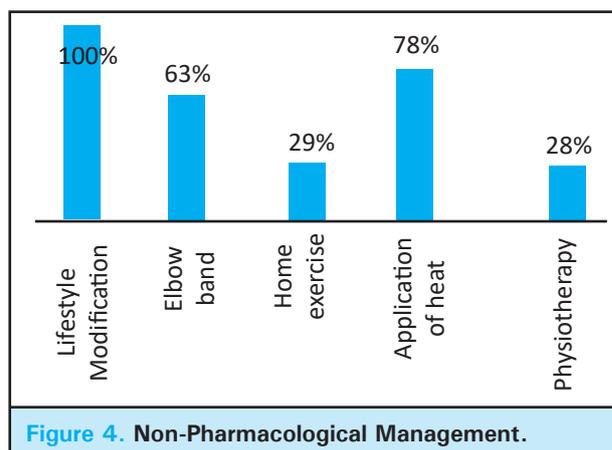
This study showed that for the treatment of tennis elbow, Non-steroidal anti-inflammatory Drugs (NSAIDs) (n=97), steroids (56%) or surgery (3%) was in practice (Figure 3). It was practiced individually or in combined form according to need and severity of patients. Conservative treatment of tennis elbow was done by

various types of NSAIDs in oral and topical form with combination of Proton Pump Inhibitors (PPI) or antacids. If NSAIDs was not effective for the management up to 6 weeks then steroid injection and oral dose of steroid was used. Among NSAIDs, Aceclofenac was used maximum (59%) followed by Naproxen, Indomethacin, Diclofenac, Piroxicam. Further, among Steroids, injection methylprednisolone acetate (23%) and oral prednisolone (21%) was used (Table 1).

Table 1. Lists of commonly prescribed drugs.			
Name of Drugs	Frequency	Duration (days)	Total (n = 97)
<b>1. NSAIDS</b>			
a. Aceclofenac 100mg tablet	Bd	7-10	59
b .Diclofenac SR 75mg tablet	Bd	7-10	16
c .Naproxen 500mg tablet	Bd	7	19
d .Indomethacin 25mg capsule	TDS	5	18
e. Piroxicam DT 20mg tablet	OD	10	6
<b>2. Glucocorticoids</b>			
a. Prednisolone 10mg tablet	OD	7	21
b.Methylprednisolone acetate Inj	SOS	up to 3 episodes	23
<b>2. PPI</b>			
a. Pantoprazole 40mg tablet	OD	7-10	61
b. Esomeprazole 40mg tablet	OD	7-10	29
<b>4. H2 Antihistamines</b>			
a. Ranitidine 150mg tablet	OD	7-10	7
<b>5. Muscle relaxant</b>			
a. Tizanidine 2mg tablet	OD	5	4

(Here, Inj=Injection, BD=Twice daily, TDS= Thrice a day, SOS=when required)

Non-Pharmacological treatment was also found to be one of the important approaches. Different non-pharmacological treatments like Lifestyle modification (to all the patient), application of heat (78%), use of tennis elbow band (63%), home exercise (29%) and physiotherapy (28%) were instructed (Figure 4).



### DISCUSSION

According to Maharjan et.al.,<sup>7</sup> in foreign countries, the incidence of tennis elbow in overall age group has no difference in gender but in context of Nepal, it is found maximum in female. Like in this study and various other findings,<sup>7,8</sup> the increment of tennis elbow in women and in housewives may be due to involvement of women in various household activities making maximum use of ECRB (Extensor Carpi Radialis Brevis) muscle that lead to tear of muscles. LE is also associated with use of computer for more than 20 hours per week.<sup>6</sup> Similarly, age based analysis showed highest incidence in age group 41- 50 years. Various studies also found higher incidence of tennis elbow over 40 years and this is related to age.<sup>7, 9-11</sup>

For the management of tennis elbow, there was use of NSAIDS, Steroids and surgery. It was practiced individually or in combined form according to need and severity of patients. According to a study of Nepal, patients were treated according to a standard protocol consisting of the use of NSAIDS, elimination of activities that provoked pain and physical therapy following injections.<sup>7</sup>

NSAIDs have role in the symptomatic treatment and improve pain in short term whereas no any short term improvement in symptoms was found with steroid injections.<sup>12-15</sup> The use of all NSAIDs, however, is not indicated and should be avoided; particularly considering the potential side effects they can cause. There is very little evidence to support the use of corticosteroid injections in the treatment of LE as a result of the relapse rates seen at 6 months and 12 months.<sup>15</sup> Further, no long term effects of corticosteroids was found.<sup>12</sup> Wards worth et.al,<sup>16</sup> found that conservative management with steroid injection and local anesthetic was successful in 90% cases whereas it was further said that such injections should not be repeated on

more than two occasions. For those patients not responding to conservative management the success rate of combination of injection of steroid and local anesthetic was found to be high. Bisset et.al<sup>17</sup> found that corticosteroid injections were clinically superior at 6 weeks but significantly worse at 52 weeks compared with both wait-and-see and physiotherapy.

In this study, non-pharmacological treatment approaches followed were lifestyle modification, home exercise, application of heat, home exercise and physiotherapy. Physiotherapy is often a treatment of choice and is

a cost effective form of treatment.<sup>18</sup> According to Jeavons et.al, although the natural history of the disease is self-limiting, with 70% to 80% of cases resolving spontaneously by 1 year.<sup>10</sup>

## CONCLUSION

It was found that, there is professional risk of tennis elbow for housewives, farmers and shopkeepers in context of Nepal. Only one treatment approach is not effective in management of tennis elbow for long term effect.

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