



An Evaluation of the Efficacy of Lornoxicam in Acute Renal Colic Treatment

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Purpose: In order to provide analgesia in renal colic, related to acute urinary obstruction, many different agents are used. Use of prostaglandin synthesis inhibitors is very common for this purpose. In our study, we aim to evaluate the analgesic effect of lornoxicam, included in above mentioned group, in renal colic treatment.

Materials and Methods: The patients, who were taken to emergency room due to renal colic, were assigned into two group. Before any treatment, they were evaluated with visual analog pain scale, using darkening color scores between 0 to 10. Group 1: 8mg injectable lornoxicam was administered, Grup 2: 75mg diclofenac sodium I.M was injected. Following treatment, at 15, 30, and 60th minutes, all patients were reevaluated for pain by using visual analog scale.

Results: Initially, 213 patients were recruited for baseline evaluation and 129 of them, were included in the study. Before treatment, mean pain scores of the patients in Group 2 were found to be (S_0) 6.10, whereas before treatment mean pain scores of the patients in Group 1 were found to be (S_0) 6.04, ($p=0.868$). While means of pain scores (S_{15} , S_{30} , S_{60}) at 15, 30, and 60th were found as 1.46, 0.84, and 0.63 respectively in Group 1, in Group 2, these values were found 3.75, 1.96, and 1.50 respectively and it was found that there was a statistically significant difference between the values (S_{15} : $p<0.001$, S_{30} : $p=0.001$, S_{60} : $p=0.01$).

Conclusions: Lornoxicam provides an effective analgesia within a short time in acute renal colic treatment and can be tolerated well by the patients. Lornoxicam may be one of the good alternatives for renal colic treatment.

Key Words: Acute renal colic, Lornoxicam, Treatment

Akut Renal Kolik Tedavisinde Lornoksikam'ın Etkinliğinin Değerlendirilmesi

Amaç: Akut üriner obstrüksiyonla ilişkili renal kolikğin analjezisini sağlamak için farklı ajanlar kullanılmıştır. Bu konuda sıklıkla prostaglandin sentez inhibitörleri kullanılır. Çalışmamızda renal kolik tedavisinde yukarıda adı geçen gruba dahil olan lornoksikamın analjezik etkinliğini araştırmayı amaçladık.

Gereç ve Yöntem: Renal kolik nedeniyle acil servise gelen hastalar iki gruba ayrıldı. Herhangibir tedaviden önce hastalar 0 ile 10 arasında renkleri koyularak skorlanan visüel analog ağrı skorlaması ile değerlendirildi. Birinci gruba 8 mg lornoksikam, ikinci gruba 75 mg IM diklofenak sodyum enjekte edildi. Tedaviyi takiben bütün hastalardaki ağrı 15, 30 ve 60. dakikalarda tekrar yüzeyel analog skala ile değerlendirildi.

Sonuçlar: Başlangıçta temel değerlendirme için 213 hasta seçildi bunların seçilme kriterlerine sahip 129 u da çalışmaya dahildi. Tedavi öncesi grup 2nin ortalama ağrı skoru (S_0) 6.10 iken birinci grubun skoru (S_0) 6.04 bulundu ($p=0,868$). Hastaların 15, 30 ve 60. dakikalarda (S_{15} , S_{30} , S_{60}) ortalama ağrı skorları birinci grupta sırasıyla 1.46, 0.84 ve 0.63 ikinci grupta bu değerler sırasıyla 3.75, 1.96 ve 1.50 bulundu ki bu değerler arasındaki fark istatistiksel olarak anlamlı bulundu (S_{15} : $p<0.001$, S_{30} : $p=0,001$, S_{60} : $p=0,01$).

Karar: Lornoksikam akut renal kolikğin tedavisinde hastalar tarafından iyi tolere edilen kısa zamanda etkili bir analjezi sağlar. Lornoksikam renal kolikğin tedavisinde iyi bir alternatif olabilir.

Anahtar Kelimeler: Akut renal kolik, Lornoksikam, Tedavi

In renal colic treatment related to acute urinary obstruction, many different agents can be used. In general, parenteral narcotic analgesics are used. Renal prostaglandin synthesis is stimulated during acute urinary obstruction.¹ Prostaglandin synthesis inhibitors can be used in renal colic treatment. Prostaglandin synthesis inhibitors in oxycam group can be used in renal colic treatment.^{2,3} Lornoxicam is a non-steroidal anti-inflammatory agent with analgesic and antipyretic effect, included in oxycam group. Its action mechanism is supposed to be associated with its inhibition effect on synthesis of prostaglandins which are inflammation mediators, via reversible inhibition of cyclo-

oxygenase-1 and cyclo-oxygenase-1 iso-enzymes in a balanced manner.^{4,5} Diclofenac sodium is a non-steroidal anti-inflammatory agent that is effective and used commonly in renal colic treatment.¹

In our study, we aimed to evaluate the analgesic effect of lornoxicam in renal colic treatment and compare it with diclofenac sodium for this purpose.

MATERIALS and METHODS

The patients, who are taken to emergency room in our hospital, with one or more of complaints such as side pain, hematuria, renal stone dropping through urethra, and nausea-vomiting, were evaluated. The patients who had renal stone with maximum 20 mm. diameter and localised in pelvis, and aged 18 to 65 and who did not take an analgesic at least within two hours, were included. To take part in the study, written consent was obtained from all patients. The patients who underwent previous urinary system surgical operation, and with severe liver and renal failure that may affect drug blood concentration, and chronic analgesic users due to different diseases, and the patients with lornoxicam or diclofenac sodium hypersensitivity and pregnant women were excluded from the study. Furthermore, the patients who presented with more than 5 leukocytes in all squares in their direct urine analysis were regarded as pyuria and excluded from the study so that it is not confused with inflammatory reaction caused by infection.

Pain was investigated in detail and their physical examinations were performed. The patients, who were not in need of emergency surgical operation and had pre-diagnosis of renal colic, were selected for evaluation. Their blood glucose, urea, creatinine, electrolyte level tests and total urine analysis were performed and their direct urinary system roentgenogram were taken in supine position and if required, urinary system calculus disease diagnosis was made definite by using urinary ultrasonography.

The patients included in the study were evaluated with visual analog pain scale, using darkening color scores between 0 to 10 before treatment. The patients were randomized into two groups. Group 1: 8mg injectable lornoxicam was administrated, Group 2:

75mg diclofenac sodium I.M was injected. All patients were reevaluated for pain by using visual analog scale at 15, 30, and 60th minutes. Pain scores and side effects were questioned and recorded by another physician who did not know patient’s group. Both groups were evaluated regarding age, stone diameter and pain score by SPSS 10.0 software and unpaired-t test, and the value of p<0.05 was regarded as statistically significant.

RESULTS

Initially, 213 patients were evaluated and 129 patients were included in the study. Mean age of the patients was 40.9 (18 to 65 years), 44 % of them were female, and 85% was male. Mean stone diameter was measured 6.51mm (4 to 17mm). While 40 patients’ stones (31%) were on right hand side, 89 patients’ stones (69%) were on left hand side. In 48 patients (37,2%), collector system dilatations were determined in different grades at stone localization side.

69 of the patients (53,5%) were included in Group 1, and 60 of them (46,5%) were included in Group 2. Before treatment, mean pain scores of the patients in Group 2 were found (S₀) to be 6.10, whereas before treatment mean pain scores of the patients in Group 1 were found (S₀) to be 6.04, and any statistically significant difference was not found between the S₀ values of the groups (p=0.86). While means of pain scores (S₁₅, S₃₀, S₆₀) at 15, 30, and 60thmin. were found as 1.46, 0.84, and 0.63 respectively in Group 1, in Group 2, these values were found as 3.75, 1.96, and 1.50 respectively and it was found that there was a statistically significant difference between S₁₅, S₃₀ and S₆₀ values (S₁₅: p:0.001, S₃₀: p=0.001, S₆₀: p=0.01). These data are summarized in Table 1 and Figure 1 .

DISCUSSION

Lornoxicam is a nonsteroidal anti-inflammatory drug in oxycam group.⁶ It is commonly preferred in rheumatoid diseases due to its anti-inflammatory effect.^{7,8} It has been shown that parenteral lornoxicam is efficacious to control pain in post-operative period.⁹⁻¹² 8mg oral lornoxicam provides

Table 1: Baseline, 15, 30 and 60th minute pain values in both study groups.

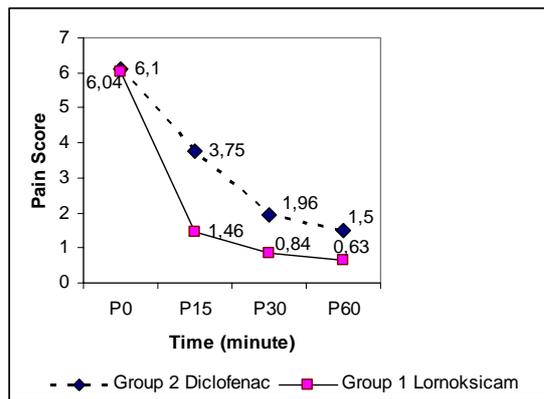
Groups	N	Baseline	15.min	30.min	60.min
Group1 (Lornoxicam)	60	6.10±2.34	3.75±2.45	1.96±2.62	1.50±2.62
Group 2 (Diclofenac)	69	6.04±1.44	1.46±1.23	0.84±0.86	0.63±0.70
p value	--	0.86	0.001	0.001	0.01

p<0.05 statistically significant

more effective pain control than 10mg morphine in post-operative period.⁶ There are several articles, reporting efficaciousness of tenoxicam and piroxicam, members of oxicam group, in acute renal colic treatment.¹³⁻¹⁵ As far as we know, there is not any clinical study revealing that lornoxicam is efficacious in urinary system calculus associated renal colic treatment.

In a study, where 30 patients with acute renal colic were evaluated, it was reported that I.M tenoxicam injection resulted in significant decrease in pain scores.² It was determined that there is no significant difference between S₀ scores of Diclofenac sodium and lornoxicam groups. Parenteral Lornoxicam application results in more rapid and statistically significant decrease in S₁₅, S₃₀ and S₆₀ pain scores in comparison with diclofenac sodium.

Figure 1. Change in pain level with time in study and control groups.



Most frequent side effects of nonsteroidal anti-inflammatory drugs are gastrointestinal side effects.¹⁶ When lornoxicam, a nonsteroidal anti-inflammatory drug, is used in 135 patients with rheumatoid arthritis for 12 weeks to compare with diclofenac, it was observed that it results in moderate head ache and gastrointestinal side effects and it can be tolerable well in long term.¹⁶ Some of 18 healthy volunteers were administrated 8mg lornoxicam twice a day, and the others took 500 mg naproxen twice a day, during one week. Before and after one week treatment, according to their upper gastrointestinal endoscopies, it was reported that, mucosal lesions are less with statistical significance in lornoxicam group.⁵ In a study where nephrotoxicity and gastrointestinal side effects of lornoxicam were investigated, it was suggested that its renal and gastrointestinal side effects are acceptable.¹⁷

In our study, severe side effect were not observed in both lornoxicam and diclofenac sodium groups. It can be used safely without age restriction in all patients with acute renal colic. Its short 3-5 hour half-life helps well tolerance.¹⁸

In acute renal colic treatment, lornoxicam can results in significant decrease in pain scores within a short time and it can be tolerable well by the patients.

Consequently; our study suggests that lornoxicam may be one of the proper alternatives for renal colic treatment. However, further studies where it is compared with different agents and include much more samples, are needed.

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