Comparative Study of Ketoprofen and Ethyl Chloride With Two Different Steroids for Management of Pain in Injury of Athletes

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Abstract:

Ketoprofen belongs to non-steroidal anti-inflammatory drug which has better results in pain management with combination of steroid and anesthetic drug. In this study compression of two combination had been observed.

Objective:

To determine the better combination of pain management drugs and steroid, to reduce the pain and inflammation among these two therapies

Methods:

The experimental study was conducted on 50 injured sports men. Subjects were divided into two groups, one Group A (Ketoprofen + Ethyl Chloride + Clobetasol treated injured sportsmen) and other Group B (Ketoprofen + Ethyl Chloride + Hydrocortisone treated injured sportsmen). Half sports men from each sport category randomly were included in Group A and remaining half sports men from each sport category were included in Group B. Injured sportsmen were included in this study and non-injured sportsmen were excluded. Treatment was applied on different sportsmen at different time periods in Physiotherapy Department Ghurki Hospital, Lifeline Hospital and Model Town Sports Complex

Results:

In group A, 11 athletes were at moderate pain level, 08 were at mild level and 02 had no pain. In group B 06 athletes were at mild level, 16 were a minimal and 03 had no pain at all.

Conclusions:

It was concluded that the combination of hydrocortisone + Ketoprofen + Ethyl Chloride showed better effects and pain relief as compared to Clobetasol + Ketoprofen + Ethyl Chloride.

Keywords:

Ketoprofen, Steriods, Clobetasol, Ethylehloride, Hydrocortisone combination management.

Introduction:

Ketoprofen is a strong and an effective non-steroidal anti-inflammatory drugbelongs to propionic acid group, it was synthesized by a French Chemist in 1967, almost 2 to 3 years after the ibuprofen which was a leading drug of this group. It was firstly introduced in 1973 among French community and United Kingdom its therapeutic activity is better than acetyl salicylic acid, ibuprofen and indomethacin. Ketoprofen has a large therapeutic window and there is no need of multiple dose. Ketoprofen has better effect in athlete injury, rheumatoid arthritis and inflammation with anesthetic and steroidal drugs[1]. Ketoprofen gel has very potent effects in athlete injury and also its effects can be increased with the addition of some other drugs in pain, in case of inflammation with steroidal drugs. Ketoprofen is observed in this study strong pain killer. Patient acceptability of ketoprofen gel was far better than piroxicam gel. More patients noted a significant calming effect with ketoprofen gel (71%) than with either piroxicam gel (49%) or diclofenac gel (60%). Ketoprofen gel also showed excellent sustainability. In conclusion, ketoprofen gel may offer better outcomes over already practiced therapies for the treatment of acute soft-tissue injury[2]. In the application of cryotherapy, the use of ethyl chloride for injury or diseases is very important in sports medicine in nowadays is well established technique in soft tissue injury. It is also used to reduce the inflammation and producing cooling effect on the area of soft tissue injury. Normally icepack, ice massage, ice towels are used in cryotherapy. Ethyl chloride produce cold effect, relaxation and also decrease the inflammatory reactions in soft tissue injury[3].The effects of local application of Clobetasol and indomethacin on soft tissue injury during cryotherapy inflammations were examined by single blind technique this combination showed definite

decrease in inflammation and pain, In this study Clobetasol had an effect on inflammation during cryotherapy[4]. Hydrocortisone use in soft tissue injury was observed to be an effective medicine which decrease the inflammation efficiently and give maximum functional recovery. Hydrocortisone effects are very fast and soon recovery. Hydrocortisone is an important part of cryotherapy in many researches[5]. In this study, the combination of Ketoprofen and Ethyl Chloride was checked with addition of Clobetasol and Hydrocortisone separately. Comparative effects of Clobetasol and Hydrocortisone effectiveness had checked with combination of Ketoprofen and Ethyl Chloride, this study was also showing the better combination to treat the athlete injuries. A ketoprofen dose OD can be efficacious as diclofenac application 3 times/day with an additional steroidal therapy. It increased tolerability, acceptance and comfort in soft tissue injury of athletes. It has proved that it is a good option for the treatment of traumatic acute pain in benign athlete-related soft-tissue injures[6]. Ethyl chloride spray was found to be effective in the treatment of limited pain caused by muscle spasm and it offers a vast field for future investigation[7]. In this the researcher aimed to prove the better results of combination of different drugs rather than individual usage of the drugs.

Methods:

In this study Ketoprofen Gel manufactured by Shrooq Pharmaceuticals named as 'Proketo Gel', Clobetasol 0.05%w/w Cream manufactured by Saffron Pharmaceuticals Company named as 'Clobeta Cream', Hydrocortisone Cream 2%w/w manufactured by GlaxoSmithKline named as 'ClaridermPlus' and Ethyl Chloride Spray were used. This study was conducted on 50 injured sports men in which 20 belongs to Football with knee and foot soft tissue injury and joint pain, 14 belongs to Cricket with leg soft tissue injury, 8 belongs to Hockey with arm and leg soft tissue injury, 8 belongs to Rugby with hand and foot soft tissue injury and joint pain. This study was divided into two groups which were Group A (Ketoprofen + Ethyl Chloride + Clobetasol treated injured sportsmen) and Group B (Ketoprofen + Ethyl chloride + Hydrocortisone treated injured sportsmen). Half sports men from each sport category randomly were included in Group A and remaining half sports men from each sport category were included in Group B. Ketoprofen gel was applied gently and complete massage on the painful and inflamed surface for up to seven days. 3 times daily applications of 3g gel, representing 10cm[8].Ethyl Chloride Spray was applied gently on the site of soft tissue injury from a difference of near about 15 centimeters at the time of injury once in day for seven days with precaution about inhalation[9]. Hydrocortisone cream was applied 0.5g on soft tissue injury area 3 times daily for seven days to Group A. Clobetasol cream was applied 0.5g on injury 3 times daily for seven days to Group B[10,11]. It is observed that which level of pain treatment had achieved in soft tissue injured athletes and results are compiled after seven days treatment.

Results:

Pain level of injured athletes with their strength has been discussed after completion of 7 days treatment with two different drug combinations on group A and group B in table 1.

	Foot Ball		Rugby		Cricket		Hockey		Total	
Athletes	10	10	4	4	7	7	4	4	25	25
Pain level	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B
Worst Pain										
Severe			1		3				4	
Moderate	5		3		2		1		11	
Mild	3	1		4	2	1	3		8	6
Minimal	2	7				5		4	2	16
No Pain		2				1				3

Table 1: Treatment with two different drug combinations on group A and group B

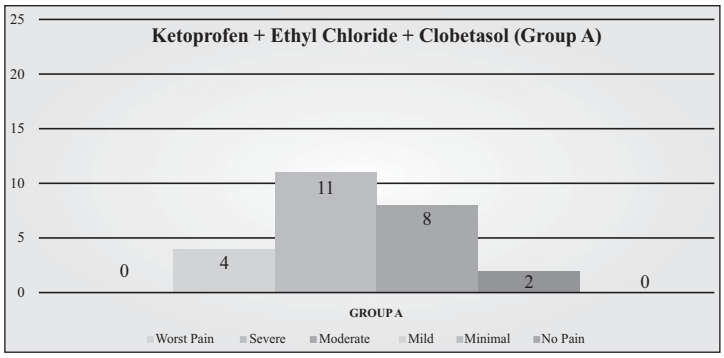

Figure 1: Treatment of different drugs on group A

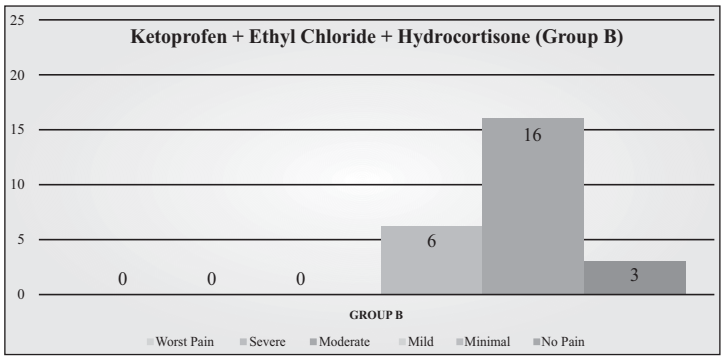

Figure 2: Treatment of different drugs on group B

Results were showing that the pain levels among 10 football players of Group A were evaluated in which 5 players belonged to moderate level and 3 were at mild level and 2 players were at minimal. Further 10 football players of Group B were evaluated in which 1 player belonged to mild pain level, 7 were at minimal level and 2 had no pain at all. The pain levels among 4 Rugby players of Group A were evaluated in which 1 had severe pain and 3 belonged to moderate pain level, in Group B, 04 other Rugby players were evaluated in which all 4 belonged to mild pain level. The pain levels among 7 Cricket players of Group A were evaluated in which 3 players were at severe pain level, 2 belonged to moderate level and 2 had mild pain, the group B contained 07 other cricket players of which 1 had mild pain, 5 belonged to minimal pain level and 1 had no pain at all. The pain levels among 4 Hockey players of Group A were evaluated in which 1 had moderate pain and 3 belonged to mild pain level, the Group B of 4 other Hockey players and all were at minimal pain level. Hydrocortisone ketoprofen + ethyl chloride's combination showed better effects on pain as compared to Clobetasol ketoprofen + ethyl chloride.

Discussion:

Ketoprofen with Hydrocortisone showed that 16 athletes were with minimal pain level which is better results for the treatment of soft tissue injury of athletes as compared to previous study[2]. Ketoprofen with Clobetasol showed that 11 athletes were with moderate pain level and 2 athletes were at no pain level which is slightly better than the previous study[4]. Use of Ethyl Chloride was only for sudden relief in previous study but in this study Ethyl Chloride had synergistic effects with other drugs combination that extended the relief from pain in soft tissue injured athletes[7]. In previous studies these drugs were used separately for relief from soft tissue injury but in this study combination effects were evaluated with two different steroids.

Conclusions:

It was concluded that the combination of hydrocortisone + Ketoprofen + Ethyl Chloride showed better effects and pain relief as compared to Clobetasol + Ketoprofen + Ethyl Chloride. Results showed that severe pain of athlete has converted in minimal, mild or no pain status in Group B which was treated by (Ketoprofen + Ethyl Chloride + Hydrocortisone).

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