COMPARATIVE STUDY OF ANTI-INFLAMMATORY EFFECT OF DICLOFENAC AND ETORICOXIB ON PATIENTS WITH INFLAMED KNEE JOINT

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Abstract

Non steroidal anti-inflammatory drugs are non-narcotic or non opioid analgesics. Various exogenous and endogenous stimuli incite a complex reaction in vascularized connective tissue called inflammation. Preferential COX-2 inhibitors named diclofenac and Selective COX-2 inhibitor named etoricoxib was taken for my present work and anti inflammatory effect was compared with control and with each other. Student-t-test was done to compare result. It was found that inflammation varied significantly across the three groups ($P=0.000$) Compared to control, inflammation was less in both diclofenac and etoricoxib ($P=0.00$). Reduction of inflammation with diclofenac was less, in comparison to etoricoxib at end. Etoricoxib is more efficacious than diclofenac.

Keywords: Etoricoxib, Diclofenac, Anti inflammatory effect.

Introduction

The inflammation dilutes, destroys or isolates the causation agent and sets into motion the sequence of event that heal and reconstitute the damaged tissue.¹

Etoricoxib is newer COX-2 inhibitor with highest COX-2 selectivity.²

It acts without affecting platelet function or damaging gastric mucosa.³

The basic morphologic patterns, which frequently have clinical significance, are (serous, fibrinous, suppurative) inflammation along with ulceration.

Materials and Methods:

This work was done at the department of pharmacology of DMCH laheriasaria darbhanga Bihar. Regarding ethical aspect, I had informed concerned authority of this college. The patients were grouped as control, diclofenac, etoricoxib for induction of inflammation. For studying anti-inflammatory effect urate induced synovitis method of Mc carty et.al was adopted.⁴

Preparation of sodium urate crystal. 4gm sodium hydroxide pellet were dissolved in 400ml distilled water in a glass beaker. 1.68gm uric Acid was added. The resultant opaque preparation was allowed to remain over night at room temperature. The next morning the crystals were harvested by decanting the supernatant solution and were

then washed, 3times in cold saline resuspended in saline and sterilized in an autoclave. Weight of Etoricoxib and diclofenac taken during experiment was 60mg once daily and 50mg twice daily respectively. Suspensions for injection were kept in rubber-stoppered multi-doses vial containing 15 to 24 mg urate per ml. Men weighing between 50 to 60 kg. were taken. The skin above one knee was disinfected and a sterile 21 gauge needle was inserted into the joint. Slight aspiration produced a small amount of clear viscous synovial fluid indicating entry into joint. The needle was left in place, a syringe containing the urate suspension was attached and volume from. 1 to 5 ml was injected into the joint (approximately 2 to mg urate). One hour before the injection of urate crystal. Men were treated with test compound or the standard. Experiment was designed so that 5 pair of men was tested on each of 2days. On the first day only one pair men received the drug one week later the opposite knee of each pair of man was injected but the other pair of men was treated.

Statistical analysis: Scoring system was adopted in which inflammatory symptom ranging from tenderness limping was assessed. Data was presented in(Mean $\pm$ SEM) and were analysed using statistical package in for social scientist 10 (SPSS) student's t-test and ANOVA were applied to compare significance between different groups ($p<0.05$).⁵

Results and discussion:

(Edema). With control diclofenac and Etoricoxib were (19.4 $\pm$.56),(14.68 $\pm$.40) and (13.40 $\pm$.50) respectively four

hour after drug administration. The mean edema in three groups varied significantly [$F(2,27)=138.40, P=.000$] the mean edema of etoricoxib group was significantly less than control [$t(18)=8.24, p=.000$]. It was also significantly less in diclofenac group in comparison to control [$t(18)=6.44, P=.000$]. However the mean swelling in Etoricoxib group was found less in comparison to Diclofenac group [$t(18)=2.68, P=.020$]. Zacher J et Al in year 2003 Conducted Anti inflammatory Work and found after 6 weeks that swelling reduction with Etoricoxib was more in comparison to diclofenac and onset of clinical benefit with Etoricoxib on day one was more rapid than that of Diclofenac.⁶ It became significant that Etoricoxib reduced the swelling more than diclofenac group. Conclusion; from above observation it is evident that

Etoricoxib is more efficacious than diclofenac as far as antiinflammatory effect is concerned.

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