Efficacy of celecoxib and diclofenac in the pain management of Rheumatoid Arthritis: A Clinical study

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Abstract

Background: Rheumatoid arthritis(RA) is a systemic auto-immune disorder, involving inflammation of the joints. Non-Steroidal Anti-inflammatory drugs (NSAIDs) are used to reduce the symptoms RA but the Non- Selective NSAIDs such as diclofenac is associated with significant gastro-intestinal side effects including bleeding, ulceration and perforations. NSAIDs like celecoxib which is selective cyclooxygenase (COX) II inhibitor is used widely in order to reduce the GI toxicity.

Objectives: To compare the efficacy of celecoxib and diclofenac in the pain management of RA.

Methods: 30 RA patients were included in the study. Group A (15 patients) was given celecoxib 100mg twice daily (200mg/day) and Group B(15 patients) was given diclofenac 50mg thrice daily(150mg/day) for 6 weeks. Pain was assessed before the start of medication and at the end of 6 weeks using Visual analogue score (VAS).

Results: Mean age, mean pre-medication VAS scores in both groups was similar. VAS scores were decreased in both groups at the end of 6 weeks, however VAS scale was more less in Group A when compared with Group B.

Interpretation and conclusions: Celecoxib is more effective when compared with diclofenac in pain management of Rheumatoid arthritis.

Key Words: Rheumatoid Arthritis, Selective COX II inhibitors, NSAIDs, Pain

Introduction

Rheumatoid arthritis (RA) is an auto-immune disorder, characterized by widespread inflammation of the synovium. NSAIDs are important in reducing pain and inflammation in RA, but they cause gastrointestinal side effects such as dyspepsia, abdominal pain and nausea, perforations, ulceration and bleeding[1]. This led to the development of the group of NSAIDs known as the selective Cox II inhibitors(coxibs) such as celecoxib, rofecoxib and valdecoxib which have good gastro intestinal tolerability[2]. This study aims at comparing the efficacy of celecoxib and diclofenac (non-selective NSAID) in the pain management of RA.

Methodology

A prospective study was done on 30 patients during period of 6 weeks. All patients were diagnosed as RA positive based on American College of Rheumatology 2010 criteria. Celecoxib intolerance, Class III/IV congestive Heart Failure, Myocardial Infarction, GI Bleed, NSAID Intolerance, Renal Insufficiency (Serum Creatinine > 1.2 mg/dL), coagulation disorder, patients younger than 45 or older than 85 years, liver failure patients were excluded from the study. Visual analogue score (VAS) was assessed in all patients before starting NSAIDs. Group A (15 patients) was given celecoxib 100mg twice daily (200mg/day) and Group B (15 patients) was given diclofenac 50mg thrice daily (150mg/day) for 6 weeks. Pain was assessed once again at the end of 6 weeks using Visual analogue score (VAS). Results were analysed based on the data obtained.

Results

In Group A, mean age of patients was 48years, 75% were females and 25% males, mean pre-medication VAS score was 5.12 and at the end of 6 weeks mean VAS score was 2.05(Improvement of 3.07). In Group B, mean age of patients was 45 years, 78% were females and 22% were males, mean pre-medication VAS score was 5.82, at the end of 6 weeks mean VAS score was 2.86 (Improvement of 2.96).

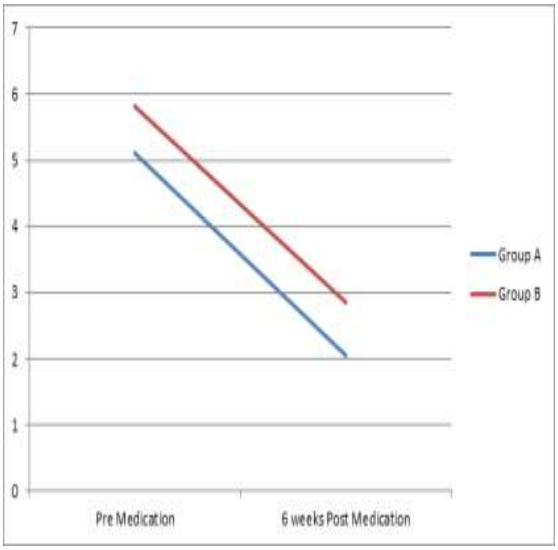

Fig. 1: Graphical representation as per mean vas scores in Group A and Group B

Discussion

NSAIDs are mainstay of treatment for pain and inflammation in RA. They prevent prostaglandin formation through the inhibition of the cyclo-oxygenase (COX) enzyme. However, the use of nonselective NSAIDS, which inhibit both the COX-1 and COX-2 isoenzymes, may cause Gastro-Intestinal bleed and platelet dysfunction[3]. Hence, selective NSAIDS i.e. cyclooxygenase-2(COX-2) inhibitors which does not compromise platelet function are widely used for pain management[4]. In the present study Group A (15 patients) was given celecoxib 100mg twice daily (200mg/day) and Group B (15 patients) was given diclofenac 50mg thrice daily (150mg/day) for 6 weeks and VAS score was noted pre-medication and 6 weeks post medication. Visual analogue pain scores[5] were converted to a standardized 0 to 10 scale with 0 indicating no pain and 10 indicating worst possible pain. Both Group A and Group B showed improvement in pain on VAS scale. No side effects were observed in any of the groups. Emery et al in 1999[6] studied the efficacy of celecoxib in patients with RA. 326 patients received celecoxib 200 mg twice daily and 329 received diclofenac 75 mg twice daily for 24 weeks. There was no documented difference between the two drugs for physician's assessment, patient assessment, number of swollen or tender joints, visual analogue scale (VAS) pain score, early morning stiffness, or C-reactive protein (CRP). However, the significant finding after 6 weeks in the present study is, Group A (celecoxib) showed lower pain scores on VAS scale when compared to Group B (diclofenac) which implies celecoxib is effective than diclofenac in lowering pain in RA patients.

Conclusion

Celecoxib is more effective when compared to diclofenac in the pain management of Rheumatoid Arthritis patients.

Conflict of interest: The authors declare that they haven't any conflict of interest.

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