The Effect of Selectivity of Inhibitors to Cox-2 Enzyme on Hepatobiliary and Platelet Function in Patients with Osteoarthritis

Abstract

Background: The development of non steroidal anti-inflammatory drugs (NSAIDs) was based principally on inhibiting cyclooxygenases (COX) activity. However, the identification of two COX- isoforms (i.e., COX-1 and COX-2) with different physiological effects has led to the development of COX-2 specific NSAIDs, with fewer adverse effects than traditional NSAIDs. Therefore, They are expected to produce anti-inflammatory activity with minimal adverse effects on GI mucosa, as well as, other structures and cells such as platelets. The aim of this study is to evaluate the effect of selectivity of COX-2 inhibitors on many organs and systems function such as the hepatobiliary system, platelets function, as well as, serum uric acid levels.

Patients and methods: Thirty six patients with osteoarthritis participated in this study. Twenty – four of them were treated with 400 mg celecoxib/day. The remainder received 15 mg meloxicam daily for 3 months .In addition to twelve apparently healthy subjects as a control . Measurement of serum alanine transaminase , serum alkaline phosphatase activity ,total serum protein, and serum albumin to evaluate hepatobiliary system . In

addition to the estimation of bleeding time to evaluate the effect of selectivity of inhibitors to COX-2 on platelets function.

Results: The results showed minor variations in their effects on liver function tests. However, meloxicam, the relatively selective COX-2 inhibitor affects bleeding time more than does celecoxib, the purely COX-2 selective. Whereas, celecoxib elevated serum levels of uric acid more than meloxicam.

Conclusion: We could conclude that selectivity to COX-2 enzyme has different odds of risks on platelets function, such effects that could add more risk factors to patients due to their pharmacological action.

Key words: Hepatobiliary, COX-2 inhibitors, Platelet function.