

# MELOXICAM INDUCED ACUTE THROMBOCYTOPENIC PURPURA

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**Abstract :** Thrombocytopenia is a well documented adverse reaction of many commonly used NSAIDs like diclofenac, nimesulide, piroxicam and other NSAIDs. With meloxicam, side effects related to gastrointestinal, cutaneous, cardiovascular and neurological systems are common; but thrombocytopenia is rarely reported with meloxicam<sup>4</sup>. A case of acute thrombocytopenic purpura in a female patient suffering from arthralgia is being reported here on account of its rarity.

## INTRODUCTION

Cyclooxygenase-2 (Cox-2) inhibitors have been shown to be effective nonsteroidal antiinflammatory agents (NSAID's) with better gastric tolerability<sup>1</sup>. The preferential Cox - 2 inhibitors include meloxicam, flosulide (CGP 2838), DUP 697, NS 398, nimesulide, nabumetone, etodolac<sup>2</sup> and these selective Cox-2 inhibitors block inflammation without blockage of Cox-1 dependent normal physiological house keeping prostaglandins. The most common causes of thrombocytopenia are bacterial or viral infections, immune disorders, collagen vascular disorders, drugs and idiopathic thrombocytopenic purpura<sup>3</sup>.

## CASE REPORT

A 48 years old educated post-menopausal lady, a known case of bronchial asthma with history of generalised nonspecific arthralgia, presented with bleeding from the mouth with no evidence of melena. When questioned, she revealed that she was given 15 mg of meloxicam for relief of joint pains by the private practitioner. History of hypersensitivity to sulpha group of drugs was positive. On examination, all the vitals were normal. There were ecchymosis of varying sizes on the flexor aspects of both arms without involving other parts of body (See photograph). Lips and soft palate revealed active bleeding. There was no evidence of organomegaly/lymphadenopathy. Laboratory profile revealed Hb 10.3 gm/dl, TLC 11900/mm<sup>3</sup>, DLC-P68, L30, E2, B0, platelet count 65000/mm<sup>3</sup>, RA factor negative and S. uric acid 4.2 mg/dl. Peripheral blood film was non-contributory. BT, CT, cogulation profile was normal with negative ANA, LE cell and blood culture. Bone marrow aspiration revealed peripheral destruction of platelets.



A diagnosis of meloxicam induced acute thrombocytopenia was made. The drug was stopped and patient was put on prednisolone 1mg/kg body weight. On the third day, she had an episode of haemetemesis but no melena. Her Hb came down to 7 gm/dl with platelet count 60000/mm<sup>3</sup>. She was given 2 units of blood transfusion and immunoglobulins I/V in doses of 1 gm/kg body weight for 2 days. The bleeding stopped from gastrointestinal tract (GIT) and oral cavity. The endoscopic evaluation of GIT was normal. On 4th day, platelet count increased to 1.90 lac/mm<sup>3</sup>. She was continued on oral prednisolone from 40mg/day to tapering doses of 5mg/day for a period of six weeks after which, the platelet count improved to 2.52 lac/mm<sup>3</sup>. After 6 months of follow up, she was asymptomatic with normal platelet count of 2.74 lac/mm<sup>3</sup>.

## DISCUSSION

The most common causes of thrombocytopenia are viral or bacterial infections, immune disorders, collagen vascular disorders, drugs and idiopathic thrombocytopenic purpura<sup>3</sup>. Most of the drugs are known to produce

thrombocytopenia by either suppressing platelet production or causing immunological destruction of platelets. Majority of the cases occur due to immune complex mediated mechanism. Current laboratory tests can identify the causative agent in 10% of patients with clinical evidence of drug - induced thrombocytopenia<sup>3</sup>. Thrombocytopenia is a well documented adverse reaction to many commonly used NSAIDs like diclofenac, nimesulide, piroxicam and other NSAIDs. No dose dependence or age preference factor is noted. From September 1996 when meloxicam was first marketed in UK till mid June 1998, the UK Committee on safety of medicines had received a total 773 reports of 1339 suspected adverse reactions with meloxicam<sup>5</sup>. The most adverse reactions with meloxicam pertain to various systems like GIT, cutaneous, CVS and CNS. Of all the reactions, 41% are gastrointestinal like perforation, ulceration, haemorrhage and or bleeding pruritis, erythema multiforme, bullous eruption, rash and urticaria are the most common cutaneous manifestations. Neurological adverse effects include nausea, vomiting and dizziness. Although thrombocytopenia has been reported in 2 patients, but no case of thrombocytopenic purpura has been reported in a study of 19087 patients using meloxicam in England<sup>4</sup>.

Meloxicam has been suggested to be a selective Cox-2 inhibitor based on in vitro studies<sup>6</sup>. However, when tested in vivo in human beings, its selectivity to inhibit Cox-2 compared to Cox-1 was only about 10 folds and there was some inhibition of platelet Cox-1 mediated thromboxane production after oral treatment with both 7.5 mg/day and 15 mg/day<sup>7</sup>. Patoria et al<sup>8</sup> has proposed that the extent of inhibition of Cox-1 with meloxicam is largely a function of dose and interindividual variability of drug levels.

The best proof of a drug induced etiology is the clinical course and abrupt rise in the platelet count as observed in the present case. High dose intravenous gammaglobulin given in doses of 1 gm/kg body weight over 6-8 hours for two successive days is usually an effective treatment for any induced immune thrombocytopenia. Since thrombocytopenia usually develops within 12 hours in a previously sensitised individual, but in this patient, it appeared after 24 hours of drug ingestion with no history of previous sensitization. A similar case of acute thrombocytopenic purpura caused by meloxicam has been reported earlier also<sup>9</sup>.

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