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A Case Report on Drug Induced Blood Pressue –Etoricoxib

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ABSTRACT
Non-steroidal anti-inflammatory drugs (NSAIDs) are heterogeneous group of compound that act by Inhibiting Prostaglandin biosynthesis act and been widely prescribed for decade in the treatment of Pain fever and Inflammatory disease. Etoricoxib is one of the latest cox-2 inhibitor which is being use in the treatment of chronic pain, Rheumatoid arthritis condition with restricted quality of life IncludingGeriatric patient which causes Gastro-intestinal side-effects compare to Non selective NSAID. There are very few evidence present about etoricoxib causing an elevation in blood pressure in controlled Hypertensive or in Normotensive patients. Acute elevation of Blood pressure is patients using etoricoxib should be suspected, which is a primary cause for secondary Hypertension (drug induced). "There elevation in blood pressure are short term and rare emergencies associated with current use of the drug and can be reversed once the suspected drug to de-challenged, and achieve adequate blood pressure control. Hence, therefore use of etoricoxib Should be contraindicated to patient who are having history of hypertension, in patients with poor hypertensive control and in patients who are having stage I hypertension I.e..BP 140/90 mmHg.The present case summarizes the therapeutic agents which resulted in unusual elevation of blood pressure and their mechanism.

KEYWORDS: Etoricoxib, NSAIDs,Hypertension,

I. INTODUCTION

Non-steroidal anti-inflammatory drugs (NSAIDs) are heterogeneous group of compound that act by Inhibiting Prostaglandin biosynthesis act and been widely prescribed for decade in the treatment of Pain fever and Inflammatory disease. In 2003,Etoricoxib is a novel bipyridine cox-2 selective InhibitorIn contrast with celecoxib, Valdecoxib&praecoxib ,etoricoxib is a methylsulfone and doesn't contain the sulfonamide moiety that has associated with an Increased risk of hypersensitivity reaction.NSAID's are never free of their side- effects profile that Including, Hepatotoxicity, Nephrotoxicity, Gastrointestinal toxicity, Aspirin Causing Asthma. Mechanism of NSAID'S is that, act by Inhibiting Prostaglandin biosynthesis by inhibiting an enzyme Cox-1 & cox-2 (cycloxgynase) .[1]

Etoricoxib is one of the latest cox-2 inhibitor which is being use in the treatment of chronic pain, Rheumatoid arthritis condition with restricted quality of life. IncludingGeriatric patient which causes Gastro-intestinal side-effects compare to Non selective NSAID.Studied Conducted in 45,451 patients through 19 Clinical trials there appeared in greater blood pressure elevation with cox-2 inhibitor Compared with Placebo and non-selective NSAIDS ibuprofen and diclofenac.[2]

Etoricoxib when used in Patients with history of hypertension was resulted in greater in blood pressureassociated with discontinuation of medication when compared with other NSAIDs. The incidence of elevated blood pressure has been challenging to quantify due to uncommon clinical entity .So, use of etoricoxib in patients with persistence hypertension will remain a clinically important etiology of elevated blood pressure levels, and accurate reporting of such incidence will create an awareness and detection of drug induced hypertension. [2]

We Present a case of unusual elevation of blood pressure in a rheumatoid arthritis patient Associate with use of etoricoxib. Etoricoxib is a selective cox-2 inhibitor and Supplied orally form. Commonly in oral dosage reported side effects associated with etoricoxib use include dizziness, Headache, Irregular sleep, vomiting .To date there has been only few Case report published on etoricoxib associated hypertension.

II. CASE PRESENTATION

A 40year old female who is normotensive and is not on any medications and having a controlled blood Pressure of of 120/80mmhg on regular check up with appropriate life style modification , had presented in emergency department with complains of breathlessness since half an hour having blood pressure of 240/110mmhg on examination.

Repeated blood Pressure was measured on the next was 150/90mmhg on taking patient history patient having an history of Rheumatoid arthritis

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and is on Tab.Etoricoxib medication prescribed by orthopedic physician for joint pain.

Patient had admitted that she has taken etoricoxib tablet 90mg for Pain, Later the patient. Advised to stop etoricoxib and Serial monitoring of blood pressure was fallen between 140/90 mmHg to 120/90mmHg respectively requiring an antihypertensive therapy(T.telmisartand T.lasix).

Hence, the meticulous History taking about use of chronic current medication emphasize its Importance In knowing about any changes in underlying pathology of patient.

Salt intake and DASH therapy has an greater Impact on adequate Maintaining of blood pressure in patient especially in Indian setting "being the salt sensitive hypertensive. Restriction in salt intake has a greater role in lowering and maintaining controlled blood pressure.

III. DISCUSSION:

Drug induced blood pressure is caused by wide range of drug both prescription and non prescription drugs termed as drug induced hypertension. Drug induced hypertension varies in severity from Asymptomatic mild to severe elevation in blood pressure causing renal damages well as end organ damage and mortality in some cases .presently there are many drugs which are suspected for causing drug induced hypetension.NSAIDS causes elevation in blood pressure by interfering in the production of prostaglandin causing adverse effects .

Current case report etoricoxib may increase the blood pressure in dose dependent way and represent as interaction between the drug and prostaglandin system causing elevation in the blood pressure levels. The majority of drug which involve in Elevating the Blood pressure are not associated with any hypertensive risk in preclinical and clinical stage of drug testing, several factors contributing to the under reporting of incidence as occurrence may be noted in the few patients exposed to the drugs ,relatively small population used in clinical drug trials in view of detecting such uncommon adverse effect .This can be best explained with a similar cox-2 inhibitor rofecoxib which was earlier used in the juvenile arthritis ,migraine and acute pain ,had a greater risk of elevating the systolic and diastolic blood pressure when compare to other traditional NSAIDs.

Thus, the drug rofecoxib wasvoluntarilywithdrawn from the marketing 2004 Partnering with Increased risk of elevated blood pressure level, greater risk heart attack and Stroke. Thus, it may not be of Greater Concern until the drug comes to market and thousands of Patients are exposed to drug till Its adverse effects get recognized. This is a major limitation for the clinicians with respect to reporting of suspeted adverse effect food and administration.

Since there are no specific diagnostic tests related to elevation in blood pressure after the administration of drug might be challenging. since there exist only serial monitoring Could Predict elevation in the blood pressure .The diagnosis of drug Induced hypertension may be even more challenging if the patient has Pre-existing Associated Co morbidities and falling co-morbidities and Concurrent use of drug any other drug may contribute to the elevating in Blood Pressure levels.

In the Recent case, hypertension due to extoricoxib in the the patient neither had pre-existing hypertension nor used of any other drug which contribute to the elevating in the blood Pressure.

Non-steroid an inflammatory drug (NSAIDS) plays an potential role on Blood pressure. NSAIDs act by inhibiting both cox-1 and cox-2 isoforms, leading to decrease in Prostaglandin biosynthesis. The merit and awful effects on of this Class of drug is widespread. Drug induced hypertension related to blood pressure elevation is because of NSAIDs impact on renal function.

In particular NSAIDS cause enzyme related sodium retention followed by water retention, dose related administration of these medications lead to sodium water retention , which is more pronounced with cox-2 inhibitor when compared with other NSAIDs.

The enzyme cox-1 and cox-2 are originated in the glomerules and macula dense of kidney respectively The specific location of there is forms has Impact on the renal function. The prostaglandin produced by cox-1 I basically involve in maintance of Homeostasis by Causing vasodilatations in renal vascular bed ,decreasing the Vascular resistance and thereby, increasing the renal perfusion. Prostaglandins created by cox-2 by Isoform have diuretic & Natriuretic effect in Patients with Compromised Hemodynamic, the Impact of these two isoforms fundamental for the upkeep of renal Perfusion, as a result of vasodilator impact. Since the Inhibition of cox-1 and cox-2 prostaglandin by NSAIDs renal impact is more pronounced in 1%-5%NSAID users. The enzyme cox-2 plays an Important role in

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maintaingNatriuresis when Inhibited Causing Na+& H_2O Retention & further leading to Vasoconstriction by edothelin- I and thereby Induction of HTN in normotensive or in controlled Hypertensive patients.

Assessment of causality in suspected adverse drug reaction remains a challenging ,however two scales were used which gave score of 6 (5-8 probable).another causality used in the WHO-UMC scale which gold slandered for the assessment of severity in the events in the individual case reports which also established a probable /likely relation between drug and the adverse drug reaction .Therefore the assessment of severity on both the scales give the probable relationship between the occurrence of an adverse drug reaction .The drug was however dechallenged after the elevation in the blood pressure levelsand the attempt for rechallenge with etoricoxib was not attempted in our patient in concern with her safety.

Pharmacoepidomological data also suggest that the existing co morbidities and physiochemical properties of the drug also play an important role in the elevation of blood pressure levels pharmacokinetics suggest that etoricoxib is intensively metabolized by liver and excreted by urine therefore it is not recommended with in patients having end stage renal damage (ESRD)which predispose patients for hypertensive emergencies.

The Meta-analysis Studies also showed the evidence that elevated blood pressure associated with use of r selective NSAIDS in contrast with other traditional NSAIDS. Among these selective Cox inhibitors such as etoricoxib and roecoxib, etoricoxib have the highest evidence of elevating the blood Pressure In comparison with Other Cox-2 Inhibitors. In an RCT Conducted Showed the 397 Incidence of Hypertension related ADR and 81 discontinuation of drug due to Hypertension related ADR which was relatively high is comparison to diclofenac and celocoxib. Therefore there exists a greater evidence of Safety Profile for celecoxib and Other NSAIDS in comparison with etoricoxib.

Hence in future cases associated with such elevation in Blood Pressure levels with concurrent etoricoxib use Should be reported , and efforts should be made to reported depict the underlying mechanism for the occurrence of such Incidence with use of etoricoxib .

IV. CONCLUSION

Etoricoxib which is an effective analgesic medication having advantage over traditional NSAIDs which used for the treatment of osteoarthritis, gouty arthritis and rheumatoid arthritis. There is very few evidence present about etoricoxib causing an elevation in blood pressure in controlled Hypertensive or in Normotensive patients. Acute elevation of Blood pressure is patients using etoricoxib should be suspected, which is a primary cause for secondary Hypertension (drug induced). There elevation in blood pressure are short term and rare emergencies associated with current use the drug and can be reversed once the suspected drug to de-challenged, and achieve adequate blood pressure control. Hence, therefore use ofetoricoxibshould be contraindicated to patient who is having history of hypertension, in patients with poor hypertensive control and in patients who are having stage I hypertension I.e..BP 140/90 mmHg .In Conditions where Use of etoricoxib is definite patient Should be added with antihypertensive therapy and monitored for two weeks after the treatment is commenced and regularly thereafter.

REFERENCE

[1]. Challa RV, Krishnamurthy V, Maheswari E. Unusual Case of Elevated Blood Pressure-A Case Report. Ann Clin Case Rep. 2022; 7.;2267.
[2]. Patrignani P, Capone ML, Tacconelli S. Clinical pharmacology of etoricoxib: a novel selectiveCOX2 inhibitor. Expert Opinion on Pharmacotherapy. 2003 Feb 1;4(2):265-84.
[3]. contreras AE, Cervantes JVM, Collantes-Estevez E. Update on the clinical pharmacology of etoricoxib, a potent cyclooxygenase-2 inhibitor. Future Rheumatol. 2007;2(6):545-65.
[4]. GOOD D. NSAIDs appear to increase blood pressure more than celecoxib. Medscape. 2019.
[5]. GOV.UK. Etoricoxib: Prescribing to patients with high blood pressure. 2019.
[6]. 4. NPS MedicineWise. Etoricoxib (Arcoxia): Be aware of hypertension risk. 2019.
[7]. Krum H, Swergold G, Curtis SP, Kaur A, Wang H, Smugar SS, et al. Factors associated with blood pressure changes in patients receiving diclofenac or etoricoxib: Results from the MEDAL study. J Hypertens. 2009;27(4):886-93.