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Case Report

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Case Report of NSAIDs induce Peripheral Edema

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Abstract

NSAIDs are the drugs that block the production of certain body chemicals which causes inflammation, these drugs reduce pain, fever, blood clots and also causes side effects like edema, cardiac problem, respiratory, GI conditions. Inhibition of PGE2 causes sodium and fluid retention in the patients causes peripheral edema.

Keywords: NSAIDs, Peripheral Edema, Side Effects, and Adverse Reactions.

Introduction

Non-steroidal anti-inflammatory drugs (NSAIDs), were prescribed by physicians as analgesic, antipyretic and anti-inflammatory agents which is the most used drug of class around worldwide. Most of the side effects are due to COX-1 inhibition, because of its action in several systems including cell cleansing. In kidney mostly act on glomerular filtration rate maintenances along with renal problems some other complications like gastrointestinal, cirrhosis, cardiovascular, and platelet (thrombotic events) changes requires caution in prescription.[1] Effect of renal homeostasis caused by the inhibition of cyclooxygenase-dependent generation of prostaglandins (PG) is the primary mechanism. Each nephron component COX isoform expresses at different levels. More PG synthesis (including PGE2 and PGI2) involves NSAIDs associated with edema. 2–5% of NSAIDs users were uncommon in the occurrence of Peripheral edema.[2] Most of the NSAIDs and COX-2 inhibitors are apparently causing fluid retention and effects on blood pressure. These drugs show the impact of musculoskeletal conditions on functional impairment outstrips that result from cardiovascular, respiratory, renal, gastrointestinal, psychiatric, and neurologic conditions in the United States. The most common side effects of NSAIDs were fluid retention and edema results of prostaglandin E2 production inhibition.[3]

Hayashi et al. showed that NSAID users have a high risk of kidney injury, renal risks from NSAIDs could be reversible. NSAIDs are considered safe, the therapeutic dose also causes the risk of loss of renal function, high dose of NSAIDs shows the greater risk of AKI in patients.[4,5] Abnormal accumulation of fluid in body interstitial space is known as Edema. nephrotic and nephritic syndromes are the leading cause of renal edema.[6]

Case Report

A male patient was admitted to the male medicine ward in a government general hospital with the chief complaints of shortness of breath for 1 week and altered sensorium for 2 days. History of NSAIDs drug abuse present and known case of CKD. The patient was a known smoker and not a known case of Diabetes, Hypertension, Asthma. The patient was diagnosed with Altered sensorium with AKI with Sepsis with hypoglycemia with right lower limb cellulitis. Lab reports for that patient shows Hemoglobin-11.6g/dl, total count- 8000 cell/cum, Neutrophils 88%, Lymphocytes 10%, Eosinophils 1%, Monocytes 1%, Platelets- 1.1 lacks/cum. B. Urea – 39mg/dl, S. Creatinine – 0.8mg/dl.CT Scan Brain – Mild bilateral periventricular ischemic changes. The patient got the treatment with Inj. Cefperazone Salbactum (1.5g), Inj. Pantop (40mg), Inj. Lasix (40mg), 5% dextrose infusion and 25% dextrose infusion. Inj. Optineuron.

Figure :1 Shows Edematous in leg

Figure: 2 Showing the edematous in hands

Outcomes and follow up:

After suspecting the conditions, patients were advised Antibiotics to control infection rate (sepsis, cellulitis) and provide symptomatic treatment. After 2 weeks of treatment, the patient showed significant improvement in his condition and get discharged.

Discussion

NSAIDs promote sodium and water retention which is explained by a reduction in prostaglandin-induced, both renal chloride reabsorption and the action of the antidiuretic hormone are inhibited.[7] NSAIDs inhibits the cyclooxygenase culminates in a decrease in total perfusion and medullary influx deviation (decrease GFR) and water and sodium retention results in renal vasoconstriction and medullary ischemic causes acute kidney injury, chronic effects can result in chronic kidney injury which leads to fluid retention causes edematic conditions.[1,8] Antirheumatic drug, calcineurin inhibitors, an antitumor drug, and NSAIDs are the drugs induced by renal failure. High incidence of acute kidney injury in the nephrotoxic potential of dual or triple combinations of (NSAIDs + renin-angiotensin system inhibitors or NSAIDs + diuretics). Heart attack and stroke have the adverse effects of NSAIDs. Other adverse effects include stomach pain, constipation, diarrhea, gas, heartburn, nausea, vomiting, and dizziness.[9] PGE2 inhibition causes sodium retention, which causes weight gain, peripheral edema, Blood pressure, or rarely, congestive heart failure.[10] The treatment includes Antibiotics for the control of infection to that patient.

Conclusion

Edema is a condition in which fluid accumulation in body space is developed by the infection or drugs like NSAIDs. The proper usage of NSAIDs with caution and the proper indication of prescription helps in prevention of edema in patients. This knowledge will help in identify and reporting these types of conditions.

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