

Case Report

Integrative Clinical and Practical Hematology

Acquired Agranulocytosis - A Case Report of Levamisole Induced Agranulocytosis from Cocaine Abuse

Yanamadala A*

Department of MacNeal Hospital, 3231 S. Euclid Ave, Berwyn, USA

***Correspondence:** Anusha Yanamadala, MacNeal Hospital, 3231 S. Euclid Ave, Berwyn, IL 60402 USA, Tel: 201-626-0897; E-mail: anushayanamadala90@gmail.com

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Abstract

Background: Agranulocytosis is a rare condition with incidence of 1-5 cases per million. Immunosuppressive agents are one of the most common cause for drug induced agranulocytosis. Cocaine ingestion causing agranulocytosis is not that common. We are presenting an uncommon presentation of agranulocytosis in a patient with no history of hematologic disorders that might have been caused by adulteration of cocaine with levamisole with significant history of cocaine abuse.

Objective: Levamisole was increasingly being used as an adulterant in cocaine in recent times. It was found to cause oropharyngeal symptoms in about 50% of cases and hematologic manifestations like purpura, agranulocytosis, vasculitis in about 20-25% of cases from review of cases reported in the literature although it needs further research in large population to explicitly understand the hematologic manifestations of the drug.

Keywords: Agranulocytosis, Cocaine abuse, Levamisole, Case report

Case Report

40year old male with history of cocaine abuse presented with history of fevers, sore throat and abdominal pain of 1 day duration. On exam, he is febrile with T: 103 F and has mild diffuse tenderness of abdomen without rebound or guarding. Initial labs revealed Absolute Neutrophil Count (ANC) of 0/mm³ and urine tox screen positive for cocaine. On further imaging he was found to have left maxillary sinusitis and small bowel enteritis on computer tomography of abdomen. Patient was empirically started on vancomycin and cefepime along with supportive care. Findings of agranulocytosis with history of drug abuse prompted us to check for infectious causes with rapid strep test, epstein barr virus, acute hepatitis panel, cytomegalovirus, HIV, parvo B19, flu which came back normal. On day 3, symptoms improved with continued supportive care and improvement in ANC from 0 to

500/mm³ with negative blood cultures and eventual discontinuation of antibiotics. Patient was discharged from the hospital with complete resolution of symptoms on day 4.

Discussion

Cocaine is the most common cause of drug abuse related emergency department visits and 1/3 of drug abuse causing mortality in the United States. Levamisole is an immunomodulatory agent and common adulterant of cocaine that has been significantly increased in usage in recent times and was found to be associated with as many as 75% of cocaine users [1]. It was shown to cause agranulocytosis, leukoencephalopathy or cutaneous vasculitis [2,3]. In our case, levamisole is thought to be the most likely cause for agranulocytosis with significant history of cocaine abuse, immigrant from Mexico and no

other history of hematological disorders or family history with negative workup for infectious causes and not using any other medications. The mechanism was thought to be related to granulopoiesis impairment inhibiting neutrophil maturation [4]. In patients presenting with agranulocytosis, adequate history with regards to illicit drug use should be obtained and cocaine use should be in consideration for differential.

Declarations

Ethics approval and consent to participate

Informed patient consent was obtained from patient.

References

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