

Rifampicin Induced Thrombocytopenic Purpura

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ABSTRACT

Thrombocytopenia is defined as a reduction in the peripheral blood platelet count below the lower limit of normal range. Thrombocytopenia is associated with abnormal bleeding that includes spontaneous skin purpura and mucosal haemorrhages as well as prolonged bleeding after trauma. We report here a case of Rifampicin induced Thrombocytopenic Purpura in a 30-years old female who was managed conservatively and with-holding Anti-tubercular treatment and there-by re-introducing Anti-tubercular drugs one by one.

Keywords: Rifampicin, ecchymotic patches, thrombocytopenia, thrombocytopenic purpura.

INTRODUCTION

Serious and life threatening adverse drug events with first line antituberculosis drugs are rare but not unknown. Rifampicin is a part of both category I and II antituberculosis regimes. Unlike other antimicrobial drugs, it is to be taken for a prolonged period of 6–9 months daily or intermittently, thus increasing concerns about the adverse effects. Thrombocytopenia with Rifampicin was first documented in 1970. We present an even rarer adverse event, a case of thrombocytopenia with ecchymosis and petechiae on trunk, back and forearms caused by rifampicin.

CASE HISTORY

A 30 year old female known case of Tubercular Pleural effusion Right side on ATT (CAT 1?DOTS) since 20 days presented in OPD of Respiratory Medicine Department with complains of multiple rashes over trunk, back and both upper and lower limbs, ecchymotic patches over forearm & thigh, nausea and vomiting, yellowish discoloration of sclera and urine.

So she was admitted as a suspected case of ATT induced Purpura with Hepatitis. ATT was discontinued & Routine Lab investigations were sent. On General examination, except icterus there was no any positive finding. On systemic examination, air entry was diminished in right inframammary, infraaxillary & infrascapular area. No any other positive findings

were observed on systemic examination. Her local examination revealed multiple small ecchymotic rashes over trunk, back and both forearms and thigh with no increase in local temperature & no tenderness (Figure 1). There was no evidence of active bleeding from any site. Chest X ray P/A view-suggestive of Right sided pleural effusion

Laboratory Investigations revealed platelet count of 58,000 with normal coagulation profile & normal haemogram. LFT was deranged with serum bilirubin (T) -4.99, (D)-2.94, (I)-2.05, SGOT-1041, SGPT-669. Other lab investigations were within normal range. Patient was managed symptomatically with IV fluids, antacid, antiemetics, liver protective enzymes. ATT was withheld. Three days later again CBC and LFT was done which revealed platelet count of 1,24,000 & serum Bilirubin was decreased to 2.19 (T), 1.3 (D), SGOT -226, SGPT -434. So now the patient was given oral Isoniazide 300mg OD and Tab Ethambutol 800mg OD which she tolerated well. Patient was symptomatically better and no fresh lesions were seen. Ecchymotic rashes were also reduced.

On Day 7, patient was given Cap. Rifampicin 600 mg orally, but after 8 hours, she developed multiple fresh ecchymotic rashes all over the body. So, urgent CBC was done; which showed platelet counts of 3000 only with no evidence of active bleeding from any site. Patient was managed with I.V Fluids and Platelet transfusion was planned. Repeat CBC was done after 12 hours which revealed platelet count 50,000. Repeat LFT revealed marginal increment of liver enzymes as compared to reports of day 3 i.e. Serum bilirubin (T)- 2.37, (D)- 1.16, (ID) -1.21, SGOT- 139, SGPT-304.

So, Rifampicin was withdrawn from the regimen & patient was given Tab. Isoniazid 300 mg, Tab. Ethambutol 800 mg & Tab. Levofloxacin 750 mg OD which patient tolerated well. Repeat CBC after 24 hours was within normal limits with platelet counts of 1,58,000. Follow up CBC & LFT after 5 days revealed normal haemogram with platelet counts of 2,55,000 & Serum Bilirubin of 1.8 (T), 0.8 (D), SGOT -88, SGPT - 76.



Figure 1: Diffuse Widespread Purpurae over trunk, back and upper limbs

DISCUSSION

Drug-induced immune thrombocytopenia (DITP) can be triggered by a wide range of medications. Thrombocytopenia can be seen with any of the primary anti-tubercular drugs. With isoniazid, it occurs as a haematological reaction¹. Ethambutol and pyrazinamide induced thrombocytopenia could be due to an immunological mechanism.^{2,3} Though adverse reactions to rifampicin are uncommon on daily regimens but are commonly seen with intermittent regimens⁴. These include various syndromes like, cutaneous syndrome, respiratory syndrome, abdominal syndrome, a flu like syndrome, purpura and elevated liver enzyme levels⁵. Rifampicin is suggested to act as a hapten and produce antibodies after combining with some molecules in the plasma. These antibodies against rifampicin are suggested to fix a complement on the platelets in the presence of rifampicin resulting in platelet destruction⁶. Thrombocytopenia is an adverse reaction associated with intermittent rifampicin regimen. Discontinuation of treatment allows a sufficient quantity of antibody to be built up during the drug-free interval so that when rifampicin is re-administered, an intense reaction ensues. In vitro tests, for identifying circulating antibodies are not easy to perform. No single test (complement fixation test, immuno injury test) detects all the cases of drug-induced thrombocytopenia. Direct binding assays for IgG or complement on the platelet surface are very useful⁴.

Our patient developed thrombocytopenia after 20 days of starting rifampicin on an alternate day ATT regime. And then the patient improved after discontinuation of rifampicin and again deteriorated with fresh purpuric patches with severe thrombocytopenia after it is re-introduced. Although most patients recover within 7 to 10 days and do not require therapy, occasional patients with platelet counts below 10,000 to 20,000 per μ l have severe hemorrhage and may require temporary support with glucocorticoids, plasmapheresis, or platelet transfusions. Reuse of the offending drug has to be avoided in the future since only minute amounts of drug is needed to set up subsequent immune reactions^{7,8}. If purpura occurs, rifampicin should be stopped immediately and should not be given again even in small doses².

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Please cite this article as: Chordia R, Dubey G, Puniyani S, Maldhure B, Rohankar A. Rifampicin Induced Thrombocytopenic Purpura. Perspectives in medical research 2015;3:3:30-31.

Sources of Support: Nil, Conflict of interest: None declared