Challenge of Using Antiplatelet Drugs in Patients with Primary Immune Thrombocytopenia and Recently Implanted Coronary Stents-Splenectomy as a Therapeutic Option

Dragomir Marisavljevic1,4*, Olivera Markovic1,4, Marija Zdravkovic2,4, Saša Hinić2, Nada Suvajdžić-Vuković3,4 and Branka Filipović1,4

1Hematology Department, KBC Bezanijska kosa, Belgrade, Serbia
2Cardiology Department, KBC Bezanijska kosa, Belgrade, Serbia
3Clinic for Hematology, Clinical Center of Serbia, Belgrade, Serbia
4Medical School, University of Belgrade, Serbia

*Corresponding author: Dragomir Marisavljevic, Hematology Department, KBC "Bezanijska kosa", Belgrade, Serbia, Tel: +381-65-3357-090; E-mail: maris@tehincom.net

Received date: Oct 28, 2017; Accepted date: Nov 10, 2017; Published date: Nov 18, 2017

Abstract

Background: Immune thrombocytopenic purpura (ITP) in the patients with implanted coronary stents is related with serious risks of haemorrhage related to dual antiplatelet therapy on the one hand and stent thrombosis if antiplatelet therapy is interrupted on the other hand. Therefore, the main objective in these patients is the correction of thrombocytopenia and continuous use of antiplatelet drugs.

Case report: We present the patient with implanted stents after acute myocardial infarction (AMI) and severe ITP who was successfully treated with splenectomy. After the patient experienced AMI, primary percutaneous coronary intervention (PCI) with implantation of stents has been performed. Thrombocytopenia (21 × 10^9/L) was registered for the first time after PCI intervention when it has been noticed a massive hematoma of whole right arm at the site of radial artery puncture. Immediately after the intervention dual antiplatelet therapy and prednisone has been started. Since corticosteroids and azathioprine treatment proved unsuccessful (platelet count <10 × 10^9/L), the patient has been prepared for splenectomy with intravenous immunoglobulins. As the platelet count was in stable range (40-50 × 10^9/L) after splenectomy, antiplatelet therapy has been readministered safely.

Conclusion: As there are no definitive guidelines for treatment of patients with ITP and implanted stents, the treatment should be individualized to minimize risk of hemorrhagic as well as thrombotic complications. Our case suggests that splenectomy is an available and safe treatment for these patients. However, decision on splenectomy is a challenge; and before the surgical intervention the risk-benefit assessment should be considered.

Keywords: Immune thrombocytopenia; STEMI; Percutaneous coronary intervention; Antiplatelet drugs

Introduction

Acute myocardial infarction (AMI) is very infrequent in patients with primary immune thrombocytopenia (ITP) and poses serious management problem in which a good balance between prevention of thrombosis and haemorrhagic risk must be achieved [1-4]. The main objectives in these patients are correction of thrombocytopenia and continuous administration of antiplatelet drugs. There are only a few reports of AMI in ITP patients treated by primary percutaneous coronary intervention (PCI) and dual antiplatelet therapy. Pretreatment with some of the modalities (corticosteroids, intravenous immunoglobulins (IVIg), agonists of thrombopoietin receptors, danazol and platelet transfusions) was required in a number of those patients [1-4].

Case Report

We present here the case of a 43-year-old male with simultaneous occurrence of ITP and AIM in whom the splenectomy was successfully performed after the failure of standard medicamentous therapy. In February 2016, after AIM was diagnosed, primary PCI with implantation of two stents in Left Descending Coronary (LAD) artery was performed (drug-eluting stent-DES in mid segment of LAD, Xience 2.75 × 28 mm; bare-metal stent in the proximal segment of LAD, Integrity RX 3.5 × 18 mm). Thrombocytopenia (21 × 10^9/L) in our patient, confirmed by a peripheral blood smear, was registered for the first time after coronary angiography when the massive hematoma at the site of the radial artery punctures arises. After a detailed haematological work-up, a diagnosis of ITP was established. Immediately after PCI dual antiplatelet therapy and prednisone (40 mg) have been initiated. Blood counts performed throughout the hospitalization showed a gradual increase of platelet count up to 70 × 10^9/L. The patient was discharged with dual antiplatelet therapy (acetylsalicylic acid-ASA and clopidrogel) and prednisone (20 mg). Three weeks after the AMI the patient was admitted to the Hematology department due to thrombocytopenia (21 × 10^9/L) and skin bleeding. Dual antiplatelet therapy was withheld. Prolonged treatment with corticosteroids and azathioprine proved unsuccessful (platelet count <10 × 10^9/L, presence of haemorrhagic syndrome) (Figure 1).
The patients with ITP and coronary stents require a tailored medical and interventional management. The case we reported suggests that splenectomy is an available and safe treatment for ITP patients with recently implanted coronary stents, providing stable platelet count. Decision of splenectomy is a challenge. Namely, splenectomy, a treatment often reserved for refractory ITP, can predispose to venous thromboembolism. Before the surgery, the risk-benefit assessment should be performed.

In the case of ITP recurrence after splenectomy, readministration of corticosteroids might be considered. In emergency situations, injection of IVIg may be appropriate. For a patient with symptomatic corticosteroid-dependent ITP the use of azathioprine, mycophenolate mofetil or vinca alcaloids could be appraised. Concerning TPO-RA, they are discouraged in patients with high thrombotic risk. However, a case of eltrombopag use in a patient with recent acute coronary syndrome has been published recently [1]. As there are no definitive guidelines, treatment should be individualized to minimize the risk of haemorrhagic as well as thrombotic complications.

**Conclusion**

We report the unique case of a patient with simultaneous occurrence of AIM and ITP. Thrombocytopenia was not registered before performing PCI with implantation of two stents to his LAD. After the initial good treatment response to corticosteroids which allowed the continuation of dual antiplatelet therapy the patient showed subsequently corticoresistance and unresponsiveness to azathioprine. Considering his 'favourable' thrombocytokinetic profile (platelet premature sequestration predominantly in the spleen) splenectomy appeared a reasonable treatment approach. He was prepared with IVIg for surgery. After splenectomy, patient achieved a stable partial remission allowing continuation of antiplatelet therapy.

**Conflict of Interest**

The authors have no conflicts of interest.

**References**

6. Torbey E, Yacoub H, McCord D, Lafferty J (2013) Two cases and review of the literature: Primary percutaneous angiography and antiplatelet...

