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RESEARCH ARTICLE

AN UNUSUAL CASE OF GESTATIONAL THROMBOCYTOPENIA: CASE REPORT AND REVIEW OF THE LITERATURE.

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Abstract

Thrombocytopenia is the second most common blood disorder in pregnancy. It is encountered in 7–8% of all pregnancies. Gestational thrombocytopenia accounts for almost three-fourths of all cases of thrombocytopenia. It usually develops in the third trimester, detected incidentally, patients are asymptomatic with no prepregnancy history of low platelets or abnormal bleeding, it is mild thrombocytopenia (counts more than 70 000/ μ L) and the lower level has never been established. We present an unusual case of thrombocytopenia.

Case report:-

A pregnant woman aged 27 years was diagnosed with thrombocytopenia in the 38th week of gestation, and she was admitted to our hospital for delivery. The patient had no visible bruises or haematomas on the skin of her body and arms. Complete blood tests were done immediately indicating severe thrombocytopenia, and with platelet count 68000. During hospitalization, the patient was administered 3unit of 350 ml of fresh whole blood. The entire team of experts participated in the diagnostics, treatment and delivery of this patient. On the tenth day after delivery, both the patient and her healthy baby were discharged from the hospital.

Conclusion:-

This is a unique case, and nothing similar was recorded in the available literature. We consider that diagnostic procedures and treatment, which we administered, resulted in positive outcome for both mother and the baby, representing a precious experience, which may help anyone dealing with this problem.

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Introduction:-

Thrombocytopenia, or a low blood platelet count, is encountered in 7–8% of all pregnancies^[1]. It is the second most common blood disorder in pregnancy^[2,3].

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The first blood disorder is anaemia^[3]. Platelets are non-nucleated cells derived from megakaryocytes in the bone marrow and normally live in the peripheral circulation for as long as 10 days. Platelets play a critical initiating role in haemostatic system^[1,4].

The normal range of platelets in non-pregnant women is 150 000–400 000/ μ L.

Average platelet count in pregnancy is decreased. Change in platelet count is due to haemodilution, increased platelet consumption and increased platelet aggregation driven by increased levels of thromboxane A₂. Thrombocytopenia can be defined as platelet count less than 150 000/ μ L or platelet count below the 25th percentile for pregnant patients (116 000/ μ L)^[11].

Classification of thrombocytopenia in pregnancy is arbitrary and not necessarily clinically relevant. Mild thrombocytopenia is 100 000–150 000/ μ L, moderate thrombocytopenia is 50 000–100 000/ μ L and severe thrombocytopenia is less than 50 000/ μ L.

The pathophysiology of gestational thrombocytopenia (GT) is unknown.

It usually develops in the third trimester, detected incidentally, patients are asymptomatic with no prepregnancy history of low platelets or abnormal bleeding, it is mild thrombocytopenia (counts more than 70 000/ μ L)^[5,6,7,8,9]. GT accounts for almost three-fourths of all cases of thrombocytopenia^[2,10].

Mode of delivery is determined by obstetric/maternal indications.

Platelet counts normalize within 2–12 weeks following delivery^[10,11,12].

No pathological significance for the mother or foetus is noted. No risk for foetalhaemorrhage or bleeding complications is observed^[13,14,15,16,17].

A low platelet count can also be associated with preeclampsia, HELLP syndrome or idiopathic thrombocytopenic purpura (ITP)^[18,19,20,21,22,23]. The differential diagnosis between mild ITP and GT is very difficult during pregnancy^[5,19]. ITP accounts for only approximately one case of thrombocytopenia per 1000 pregnancies and 5% of cases of pregnancy-associated thrombocytopenia, it is the most common cause of significant thrombocytopenia in the first trimester^[24,25,26,27]. Women with ITP often have a history of bleeding complications and have thrombocytopenia on a prepregnancy platelet count^[16,28]. We present this rare case of GT in a pregnant 27-year-old woman.

Case report:-

The patient, aged 27 years with GT, was admitted at our hospital on 11th December 2015 for delivery in the 38th gestation week of her second pregnancy with previous normal delivery.

She was examined at admission and the results were as follows: the cervix was os closed posterior, the head was at the entrance, and the baby's heart beats were registered. The last period was on 19th march 2015, and expected delivery date was 26th dec 2015.

The complete laboratory tests were done: Hg =5.8 g/L, WBC = 6600/uL, RBC = 2.70×10^6 /uL, Hct = 20.2%, PLT = 68000/uL, dengue IgG and IgM =non reactive, LDH =1718, S.Ferritin=485 ng/ml, Transferrin =209mg/dl, Bleeding time= 2min 10 sec and coagulation time =5 min 20 seconds.

Considering there were Hb 5.8g/dl , platelets 68000/uL, 1 Unit whole blood were given.

Repeat CBC reviewed Hb6.8 g/dl , TLC 6500/ uL and platelet 56,000 /uL. Size of liver and spleen was normal, and lymph nodes were not enlarged. The patient was active, conscious, orientated, not febrile, euphoric, without neurologic symptoms, she was walking normally, did not have headache, vision problems or dizziness. Biochemical analysis did not indicate presence of neither syndrome HELLP nor disseminated intravascular coagulation.

Ultrasound scan registered single live intrauterine fetus with 38 weeks with cephalic presentation with AFI 10 cm, fetal weight 2.7 kg, placenta fundoposterior. The patient was admitted at the high-risk pregnancy ward in order to correct the number of platelets before labour.

On 16th December, 2015, after giving 2 more units of whole blood, the patient was examined by the specialist for internal disorders, and the blood test was repeated with the following results: PLT = 29000/uL, Hb = 9.5 g/L, TLC = 4900, PT = 12 seconds, INR = 1, APTT = 26 g/L. The findings on the heart and lungs were normal, lumbar region was not sensitive to succussion, normal blood pressure 110/70 mmHg, heart rate 80/minute, no oedema, no haematoma was present. The doctor started treatment with inj Hydrocortisone 200mg iv stat and 100mg, with a 12-hour interval for 2 days, and consulting haematologist was suggested.

The patient was examined by a haematologist on the same morning and she was diagnosed with Immune thrombocytopenic Purpura, and was advised Reticulocyte count which was 3% and bone marrow examination to see adequacy to megakaryocyte and then start injectable steroids. But, due to financial problems of patient bone marrow examination could not be done and inj hydrocortisone 100 mg iv b.d. for 2 days was started.

On 18th December, 2015, patient went in spontaneous labour and considering that the labour had started, and that there was no time for further diagnostic procedures, and vital indications required urgent treatment with hydrocortisone 100mg i.v., vaginal delivery was suggested if there was no obstetric contraindication.

Blood tests were repeated and showed Hb 8.7 g/dl, TLC 10900/uL, platelet 80,000/uL, the patient was transferred to the delivery room and inj Pitocin 2.5 IU in 500 ml Ringer's lactate @ 6-8 drops/min started and titrated accordingly. She delivered the baby vaginally. She gave birth to a male baby, weight 2500 g, and 50 cm long, Apgar score 5, 6, 7 at 0, 1 & 5 minutes, respectively. The placenta was delivered by controlled cord traction normally, followed by inj Pitocin 20 IU in 500 ml of Ringer's Lactate. Antibiotic therapy was administered following labour inj Taxim 1gm iv every 12 hrly, the patient's condition was monitored.

A day after delivery (the first day postpartum) the patient's condition was good and there was no bleeding, PLT = 93000/uL and Hb 7.8, she was again transfused 1 unit fresh whole blood.

On the third day postpartum her platelets were 2,29,000/uL and Hb 8.6 g/dl, and she was again administered three doses of inj Hemfer 200mg iv in 100 ml NS on alternate days. Same treatment was continued, as well as on the sixth and seventh day, with continual monitoring of platelet count increase. On 26th December, 2015, 8th day postpartum, CBC was repeated and showed Hb 10.3 g/dl TLC 10400/dl and PLT 385000/uL.

Blood test for the newborn child was done immediately after birth and all the tests for complete blood count, biochemical tests, coagulation factors, time of bleeding and coagulation were normal. Both mother and baby were discharged on the 9th day after delivery.

Discussion:-

GT is detected incidentally. No diagnostic test exists to accurately distinguish GT from ITP^[5,19]. Silver et al.^[6] said that the degree of thrombocytopenia is usually mild to moderate, remaining greater than 70 000/ μ L and the lower level has never been established. James et al.^[29] said that in GT platelet count will not go below 40 000–50 000/ μ L. In our case of GT, we had a patient with PLT = 68000. The patient was healthy, and preeclampsia and HELLP syndrome were excluded after the blood and biochemistry tests had been done. Considering the fact that thrombocytopenia started in the third trimester of pregnancy, and that the patient's platelet count was not decreased earlier during pregnancy, nor she had problems with bleeding, ITP was also excluded.

Federici et al.^[18] said that thrombocytopenia has many potential causes, but three are responsible for almost all cases: GT 74%, preeclampsia and HELLP syndrome 21% and ITP 4%. Some authors said that no treatment is necessary for GT^[1,19,30]. In our case, the patient was administered 1800 ml of fresh whole blood starting from the first day of admission until the next day of delivery. And 3 doses of inj Hemfer 200mg and inj Hydrocortisone 100 mg ivbd for 3 days was administered. As it was demonstrated, there are extremely rare cases of GT requiring involvement of the entire team of experts (obstetrician, internal diseases specialist, haematologist and transfusion specialist), extensive treatment and monitoring of the patient.

Kadir and McLintok^[1] said that the mode of delivery is determined by obstetric/maternal indication. In our case, the haematologist insisted on vaginal delivery if there was no obstetric contraindication. There were no complications during labour itself and the postpartum period due to intensive monitoring and active management of labour. In Burrow's^[15] large 1993 study, 756 out of 1027 (73.6%) women who were thrombocytopenic had GT. Burrows^[15] concluded that GT is the most frequent type of thrombocytopenia and poses no apparent risks for either the mother or infant during delivery.

Blood test for the newborn child was done immediately after birth and all the tests for complete blood count, biochemical tests, coagulation factors, time of bleeding and coagulation were normal. Samuels et al.^[14] evaluated 162 pregnant women and their infants with thrombocytopenia, 74 with presumed GT, no infant from a GT gravida had a platelet count less than 50 000/ μ L or intracranial haemorrhage.

Kamphuis and Oepkes^[13] said that there is no risk for foetal haemorrhage or bleeding complications in GT.

Both the patient and the child were discharged on the ninth day following the delivery. The patient had regular check-ups with a haematologist, and the platelet count was back to normal. Most authors said that the platelet count returns to normal within 2–12 weeks postpartum^[6,10,11,19].

A rapid return to normal confirms the diagnosis of GT, where as continued thrombocytopenia after delivery gives diagnosis of ITP^[29].

Conclusion:-

This is a unique case, and nothing similar was recorded in the available literature. We consider that diagnostic procedures and treatment which we administered, resulted in positive outcome for both mother and the baby, representing a precious experience which may help anyone dealing with this problem.

Consent

Written informed consent was obtained from the patient for publication of this case report.

Author Contribution

All authors contributed to the conception, design, and preparation of the manuscript, as well as read and approved the final manuscript.

Competing interests

None declared.

Conflict of interests

None declared.

A.M.E

All authors abide by the Association for Medical Ethics (AME) ethical rules of disclosure.

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