

# New Onset Type 1 Diabetes And Immune Thrombocytopenic Purpura In An Adolescent Male: A Case Report

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## INTRODUCTION

Type 1 diabetes mellitus (T1D) is an autoimmune condition caused by anti-pancreatic antibodies which attack and destroy the insulin-producing beta cells. Similarly, in immune thrombocytopenic purpura (ITP), anti-platelet antibodies destroy platelets, causing low platelet counts which can lead to petechiae and bleeding. Common autoimmune conditions seen in children with T1D include thyroid and celiac disease. Previous case reports discussed ITP in children with known T1D. Our patient presented with new onset T1D and diabetic ketoacidosis (DKA) in addition to new onset ITP.

## CASE - initial presentation

The patient is a 12 year old previously healthy male with a several week history of polyuria, polydipsia and nocturia, in addition to fatigue and lack of weight gain in the previous two years. Initial labs confirmed diagnosis of T1D with hemoglobin A1c of 12.9% and serum glucose of 460 mg/dL, in addition to DKA, with bicarbonate of 13 mmol/L and pH of 7.30. Due to the presence of DKA, the patient was started on an insulin drip. Thyroid labs showed hyperthyroidism, with TSH- <0.02 (0.5-4.5 mIU/L) and free T4- 2.84 (0.7-1.68 ng/dL), so he was started on methimazole 20 mg daily. Confirmatory pancreatic antibodies and thyroid antibodies were sent. CBC showed thrombocytopenia with initial platelet count of 41,000, hemoglobin of 16.9 g/dL, and white blood cells of 5.05. Follow up platelets continued low at 37,000, so he was seen by a hematologist, which confirmed the diagnosis of ITP.

## HOSPITAL COURSE

Patient had a history of easy bruising in arms and legs, one episode of epistaxis and minimal bleeding after brushing teeth, with negative history of hematuria. Follow up labs resulted in negative thyroid antibodies (TPO, TSI and thyroglobulin Ab) with normalization of thyroid function tests, so the methimazole was discontinued. Patient is being followed by a hematologist, and anti-platelet antibodies were done, which were negative. Hematology concurred with diagnosis of ITP despite negative antibodies due to diagnosis of T1D. First line therapy for ITP is IVIG and steroids, however due to national shortage of IVIG and risk for worsening hyperglycemia with steroids, these were avoided. Instead, patient was started on Eltrombopag daily for treatment of his ITP. Eltrombopag (Promacta) is the only FDA approved thrombopoietin receptor agonist for the treatment of ITP in children (TO et al, 2018). Platelet count has improved on eltrombopag, with latest range of 126-146,000. Latest hemoglobin A1c is of 6.2%.

|                | REFERENCE RANGE   | INITIAL LABS        | AFTER 3 MONTHS OF ELTROMBOPAG |
|----------------|-------------------|---------------------|-------------------------------|
| WBC            | 4.5-10.5 Thous    | 5.24                | 4.16 (L)                      |
| RBC            | 4.00-4.90 million | 5.10 (H)            | 4.78                          |
| Hgb            | 11-13.3 g/dL      | 13.6                | 13.4                          |
| MCV            | 75.9-86.5 fL      | 72.9                | 83.9                          |
| MCH            | 25.4-29.4         | 26.7                | 28                            |
| MCHC           | 32.2-35.2         | 36.6                | 33.4                          |
| Platelet count | 150-400 thous     | <b>37 (LL)</b>      | <b>126 (L)</b>                |
| %HgbA1c        | 4-5.6%            | <b>12.9 (H)</b>     | 6.2                           |
| TSH            | 0.30-4.12 uU/mL   | <b>&lt;0.02 (L)</b> | <b>0.25 (L)</b>               |
| Free T4        | 0.76-1.46         | <b>2.84 (H)</b>     | 0.89                          |

## CONCLUSIONS

- ITP is an autoimmune condition, in addition to thyroid disease, that can present in new onset T1D.
- More research is needed to measure the frequency of ITP among patients with type 1 diabetes.
- Eltrombopag is a good treatment option for ITP, as it does not interfere with glycemic control.

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