

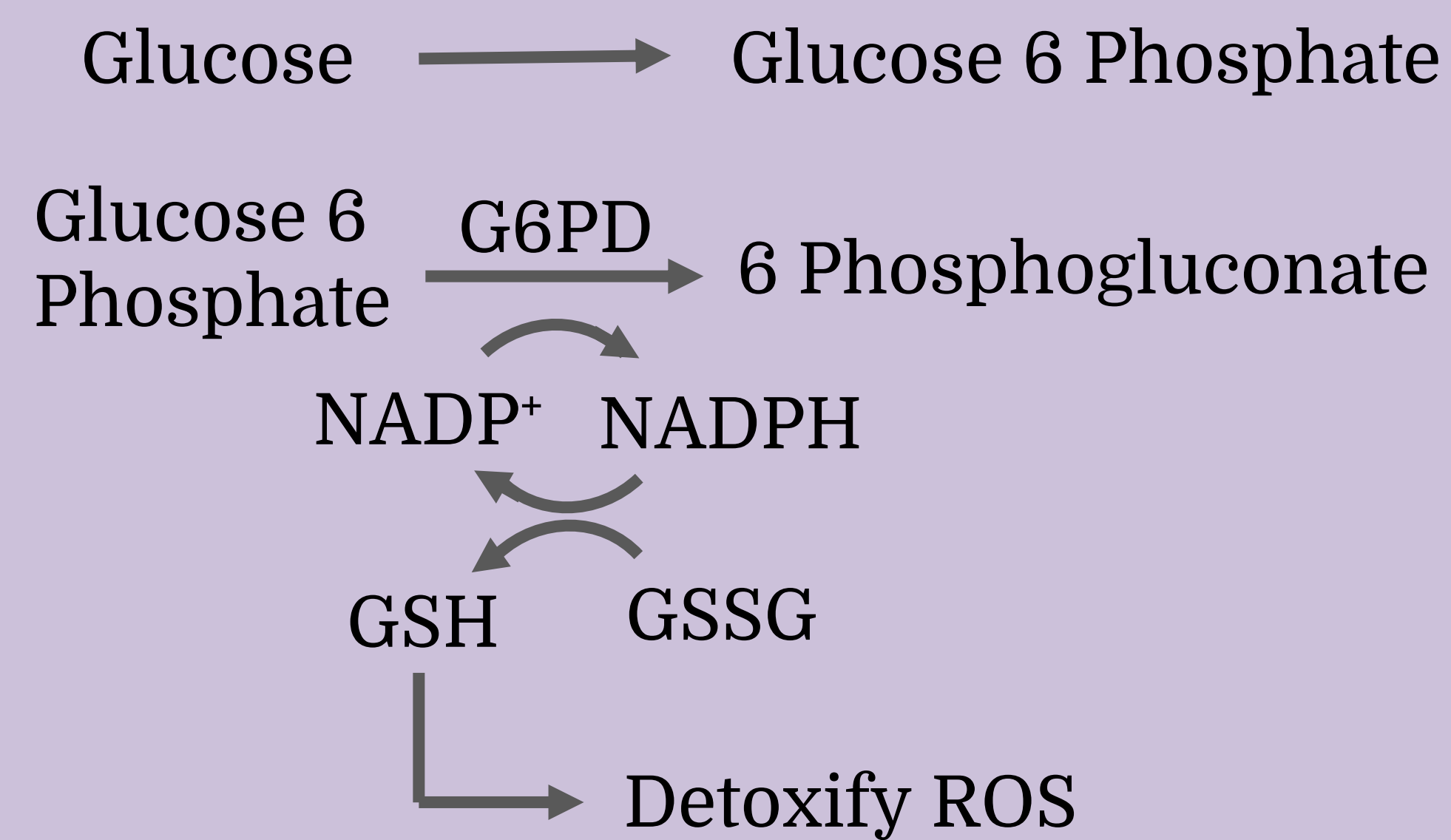
Hyperglycemia Reveals G6PD Mediated Hemolytic Anemia Exacerbated By Statin

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Introduction

The G6PD enzyme plays a key role in protecting cells from oxidative injury. Upon exposure to certain food, medication, or other triggers, increased reactive oxygen species and oxidative damage make cells susceptible to hemolysis.



Case Presentation

CC: lower extremity swelling

HPI:

- New diagnosis of diabetes when hospitalized 1 week ago for fatigue and feeling unwell
- Discharged on insulin, gabapentin, and rosuvastatin; taking consistently
- After discharge, developed worsening LE swelling

Past Medical Hx:

- Coronary artery disease s/p PCI
- Type 2/3c Diabetes Mellitus (A1c: 16%)
- Chronic pancreatitis

Social Hx:

- 1 ppd for 20+ years
- Last drink 2 years ago. Heavy use prior.
- No illicit drug use
- Works in construction

Past Surgical Hx:

- Cholecystectomy

Family Hx:

- Heavy alcohol use and cardiac disease in various members of family

Vitals:

T 98.1 BP 157/76 HR 98 SpO2 99% RA

Exam:

General: Older than stated age. Cachectic
HEENT: Poor dentition, EOMi
CV: RRR. No murmurs/rubs/gallops
Resp: Trace wheezing bilaterally
Abd: Soft, non-distended, non-tender, BS+
Extremities: 2-3+ pitting edema to calves. Pedal edema present

Labs:

138	102	14	836	9.2	46
4.2	27	0.7		6.4	109
6.9	6.4	321		2.9	150
	21.2			3.2	

Reticulocytes: 10.8%
LDH: 188
Haptoglobin: <30
Coombs Test: negative
Smear: no schistocytes or spherocytes
G6PD level: 1 (low)

What about his LE Edema?
Attributed to gabapentin and low albumin. Resolved with IV diuresis with no reoccurrence.

Discussion

- Rapid correction of severe hyperglycemia is a rare trigger of hemolytic anemia especially in the setting of undiagnosed G6PD deficiency. Decreased flow of glucose to the pentose phosphate pathway leads to increased oxidative stress, predisposing cells to hemolysis
- Rare case reports that associate statins as a trigger for acute hemolysis
- Testing for G6PD levels in an acute hemolytic episode can lead to false negative results since cells deficient in G6PD are preferentially lysed
- This patient's G6PD level was very low, confirming the diagnosis.

Oxidative stresses?
Medication side effect?
Both?

Timeline of Hospitalization

- Day 1: New dx of diabetes. A1c >16.
- Day 3: Started on rosuvastatin. Hgb 13.9
- Day 5: Discharged. Hgb 10.9
- Day 8: Current hospitalization. Hgb 6.4. 1 unit pRBC given.
- Day 9: Rosuvastatin stopped. Hgb 7.7
- Day 12: G6PD level 1 (low)
- Day 13: Discharged. Hgb 8.2
- 2 Mo: Hgb 16.1 (at baseline)

References

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