

DEMO Question 1

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Question 1

You are urgently called to the infusion chair side of a patient undergoing hematopoietic stem cell mobilization for evaluation of uncontrolled painful muscle spasms of the upper extremities and perioral numbness and tingling. This is a 57-year-old patient, weighing 78 KG, with multiple myeloma who is on his sixth day of GCSF 780 micrograms SC daily for stem cell mobilization, and is on his second day of 2.5* total blood volume (TBV)/day apheresis with a target CD34 + cell dose collection of 4×10^6 CD34+ cells/KG. His cell yield from yesterday's procedure was 3×10^6 CD34+ cells/KG, and he had significant nausea following collection yesterday. He has been on the apheresis machine for three hours today prior to symptom onset. He is mildly tachycardic and systolic blood pressure is 15 mmHg lower than baseline pre apheresis BP.

What are your next Rx steps?

1. Stop apheresis
2. Reassure and complete planned 2.5 TBV apheresis for today
3. Stop apheresis and administer IV Calcium gluconate
4. Administer Potassium chloride IV
5. Give IV Sodium chloride bolus

Answer 1

Option 3. This patient has citrate toxicity from acid citrate dextrose (ACD) which is used for anticoagulating the patients undergoing apheresis for mononuclear cell collection. This chelates Ca (and other divalent cations) and in this instance caused symptomatic hypocalcemia. The nausea from previous day likely led to low PO intake and inability to take the usual prescribed oral Calcium supplements. The patient is symptomatic and in all likelihood has reached the SC collection target already, so it is safe to stop apheresis for this day and treat the hypocalcemia. The citrate will be cleared from circulation in ~0.5 - 1 hour. If the total SC collection target is not met, it should be safe to continue apheresis on the third day with adequate Ca supplementation, and GSF administration.

See Link for Reference