

QUESTION

1. A patient with a long history of chronic kidney disease (CKD) is being prepared for a kidney transplant. The patient's current laboratory values are as follows:

Parameter	Value
Serum Creatinine	2.5 mg/dL
BUN	30 mg/dL
Calcium	8.5 mg/dL
Phosphorus	4.5 mg/dL
Parathyroid hormone-related protein (PTHrP)	150 pg/mL

2. The patient is currently on a regimen of active vitamin D supplements (1,25-dihydroxyvitamin D₃) and phosphate binders. The patient's medical history includes hypertension, diabetes mellitus, and a previous episode of hypercalcemia of malignancy.

3. The patient is scheduled for a pre-transplant evaluation. The transplant team is concerned about the patient's current calcium and phosphorus levels, as well as the potential for hypercalcemia of malignancy. The patient's current PTHrP level is significantly elevated, suggesting ongoing humoral hypercalcemia of malignancy.

4. The patient's current calcium level is 8.5 mg/dL, which is below the normal range (8.8-10.2 mg/dL). The patient's phosphorus level is 4.5 mg/dL, which is within the normal range (2.8-4.5 mg/dL).

ANSWER

1. The patient's current laboratory values indicate severe hypercalcemia of malignancy (Ca²⁺ 8.5 mg/dL) and hyperphosphatemia (P_i 4.5 mg/dL). The elevated PTHrP level (150 pg/mL) is consistent with humoral hypercalcemia of malignancy. The patient's current calcium level is 8.5 mg/dL, which is below the normal range (8.8-10.2 mg/dL). The patient's phosphorus level is 4.5 mg/dL, which is within the normal range (2.8-4.5 mg/dL).

2. The patient's current calcium level is 8.5 mg/dL, which is below the normal range (8.8-10.2 mg/dL). The patient's phosphorus level is 4.5 mg/dL, which is within the normal range (2.8-4.5 mg/dL).