

IN THE NAME OF GOD



Approach to the children with hypocalcemia

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- Approach to the patient with hypocalcemia: Is based on the causes of the hypocalcemia
- Vitamin D (deficiency or dependency)
- PTH (hypo or psuodohypoparathyroidism)
- Mg (hypomagnesemia)
- P(hyperphosphatemia :RF or during Rx of malignancy)

- Approach to the children with hypocalcemia is based on:
- History
- PE
- lab work Up

◦History : Sun exposure, nutrition, FH of rickets or hypoparathyroidism FH of Autoimmune diseases

- Lab findings in VITAMIN D deficiency
- Low or boarder line ca
- Low p increase Alk p
- Increase PTH
- 25OHvit D less than 25ng/mL

- If VITAMIN D deficiency confirmed evaluate for :
- GI losses
- Low dietary intake
- Low sunlight exposure

- Lab findings in VITAMIN D dependent rickets Type 1
- Low ca
- Low P
- Increase alk p
- high 25OH D
- Low calcitriol

- Lab findings in VITAMIN D dependent rickets Type 2
- Low ca
- Low P
- Increase alk p
- High 25OH D
- High level of calcitriol

- Lab findings in hypoparathyroidism
- Low ca
- high p
- Low PTH
- Low alk p
- Low calcitriol
- Decreased excretion of urinary cAMP

- Evaluation for hypoparathyroidism
- Medical history (neck surgery, any medical disease)
- Family history (mental retardation, features of autoimmune thyroid disease, deafness, Renal anomalies, thalassemia or iron overload) Physical examination (obesity, mental retardation, short stature, abnormal face, acrodysostosis....)

- Lab findings in pseudohypoparathyroidism Type 1
- Low ca
- high p
- High PTH
- Low calcitriol
- Decrease excretion of urinary cAMP
- Increase excretion of urinary CAMP with exogenous PTH

- Evaluation for etiology hypomagnesemia
- GI Losses (diarrhea, vomiting, malabsorption)
- Renal wasting
- Malnutrition Drug _ induced

- In elevated level of P and low level of ca Renal failure and exposure to high Phosphate should be Ruled out
- PTH is elevated in these situations

◦ In unexplained hypocalcemia in neonate and early infancy

2 below conditions should be ruled out:

◦ hyperparathyroidism in Mother

◦ Di George syndrome in infant