

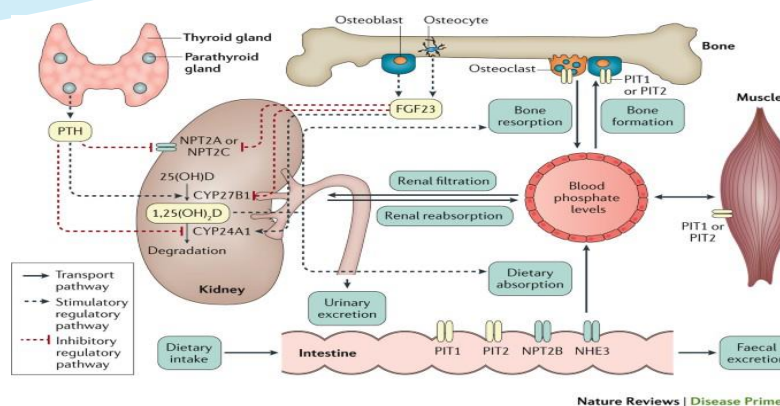
## TUMOUR-INDUCED OSTEOMALACIA

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### 01● Abstract

Phosphate is essential for normal mineralization of bone. Phosphate is also important in its own right for neuromuscular function and profound hypophosphatemia can be accompanied by encephalopathy, muscle weakness and cardiomyopathy. Hypophosphatemia can be due to intracellular uptake of phosphate from the extracellular fluid, reduced intestinal phosphate absorption, increased renal excretion, decreased renal tubular absorptive capacity and genetic defects in renal tubule phosphate transporters.



### 02● Case Summary

A 31 years old lady presented with hypophosphatemia (0.62-0.66) an abnormality she had since 2012. FGF23 is upper limit normal (98) but PTH, Calcium, FBC, RFT, BM, Vitamin D, LFT were normal. Her medical history included asthma, previous Ewing sarcoma in the chest wall for which she received chemotherapy and adjuvant radiotherapy in 2011 and multiple chest wall operations in 2011. She was an ex-smoker. Family history was unremarkable. Based on history, examination and investigation, tumour-induced osteomalacia was the most likely diagnosis.

### 03● Discussion

FGF23 plays important role in the development of hypophosphatemic disease such as TIO, X-linked hypophosphatemic ricket/ osteomalacia (XLH). It reduces serum phosphate by suppressing proximal tubular phosphate reabsorption and intestinal phosphate absorption. TIO is a rare cause of impaired bone mineralization. Removal of the tumour resulted in rapid reduction in serum FGF23 levels. In patient with TIO and XLH, FGF23 was above the upper limit of the reference range in most patients irrespective of medical treatment. Phosphate and active vitamin D can be used in excessive action of FGH23 including TIO patients with unresectable tumours ( but it has limited effects and several adverse events). Burosumab can be used in XLH.

### 04● Conclusion

Thorough medical history, physical examination and investigations including the FGF23 are important to diagnose the TIO.

### References

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Thanks!



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