HYPOPHOSPHATASIA: MORE COMMON THAN WE THINK?

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PENS 2018

CONFLICT OF INTEREST

NONE

BACKGROUD

Hypophosphatasia is a rare bone disease. There recently (end of 2015) has been a treatment developed, which can increase the quality of life in these patients, and even save their life (depending on the severity of the disease).

The diagnosis is not that difficult (lab values of low alk phos, high vitamin B6, and high urine phosphoethanolamine).

However, it is often misdiagnosed. The symptoms can be confused with rheumatoid arthritis, osteopenia, or osteoporosis, or the milder forms can also just be ignored due to lack of knowledge (mainly by the pediatricians).

We now have 9 patients in our small private practice clinic with this rare disorder varying in age from 2-19yo. **We have the most patients in our state**. This may be, because we have been actively trying to increase awareness.

OBJECTIVES

I am hoping for a discussion among my peers to

1) come up with a way to spread the knowledge
2) develop a good assessment tool
3) discuss timing of when to begin treatment.

CASE STUDY

WHAT IS HYPOPHOSPHATASIA

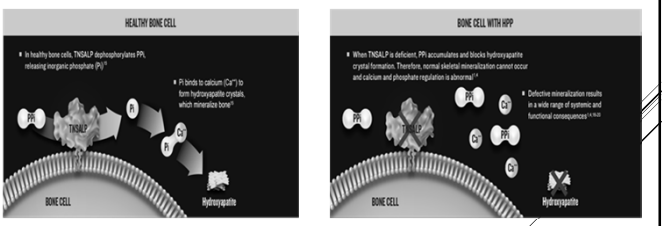
Potentially life-threatening, systemic, inherited metabolic disorder caused by a loss-of function mutation in the gene encoding tissue-nonspecific alkaline phosphatase (TNALP)

The biological hallmark of HPP is low alkaline phosphatase (ALP) activity

Low ALP activity results in accumulation of TNSALP substrates:

- Pyridoxal 5'-phosphate (PLP): major circulating form of vitamin B_6
- Inorganic pyrophosphate (PPi): potent inhibitor of mineralization
- Phosphoethanoloamine (PEA): diagnostic marker

WHAT IS HYPOPHOSPHATASIA



CATEGORIES OF HPP

- Perinatal
- Infantile
- Childhood
- Adult
- Odonto

SYSTEMIC MANIFESTATIONS OF HPP

Dental

Premature or non-traumatic tooth loss

Skeletal

Hypomineralization, rickets, skeletal deformities, bowing, craniosynostosis, osteomalecia, bone pain, fractures (frequent, recurrent, non-healing, and/or non-traumatic)

Muscular

Hypotonia, muscle/joint pain, immobility requiring assistive device

Neurologic

Increased intracranial pressure, vitamin B6-responsive seizures

Renal

Hypercalciuria, nephrocalcinosis

Ophthalmological

Calcium deposits

Growth/Development

Failure to thrive, delayed motor milestones, short stature

COME UP WITH A WAY TO SPREAD THE KNOWLEDGE

What we are currently doing:

Informational talks to pediatricians (sponsored by pharma).

Barriers:

Pharma not allowed in hospitals.

Other specialists (dentists, rheumatology, nephrology, etc) are more difficult to reach.

DEVELOP A GOOD ASSESSMENT TOOL

What we are currently doing:

At diagnosis

- obtain genetic testing
- Baseline assessments

At every visit (every 3-4mo):

- Monitor screening labs (calcium homeostasis labs)
- 6min walk test
- Survey questionnaires (to assess pain, difficulties with ADL, and emotional issues)

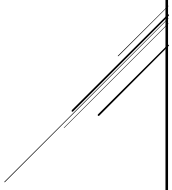
Annually:

- Rickets survey of the long bones (as opposed to full skeletal survey to minimize radiation exposure)
- Renal ultrasound
- Ophthalmological exam.

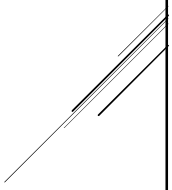
DISCUSS TIMING OF WHEN TO BEGIN TREATMENT.

What we are currently doing:

Subjective, mainly based on pain



THANK YOU



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