FECA ESTIMATION

EVALUATION OF PARATHYROID HORMONE-DEPENDENT HYPERCALCEMIA

LAB PARAMETERS

Serum Calcium, Serum Creatinine, Urine Calcium and Urine Creatinine

FORMULA

$$FECa = \frac{\text{Urine Calcium x Serum Creatinine}}{\text{Serum Calcium x Urine Creatinine}}$$

Serum analytes (calcium and creatinine) **MUST** be in the same units e.g. mg/dL or umol/day etc...

Urine analytes (calcium and creatinine) **MUST** be in the same units e.g. mg/dL or umol/day etc...

Urine and Serum analytes **CAN** be in different units

< 0.01

Familial Hypocalciuric Hypercalcemia

> 0.01

Primary Hyperparathyroidism

"GRAY ZONE OF 0.01-0.02"

FHH is characterized by a triad of **hypercalcemia**, **inappropriately normal** or **elevated parathyroid hormone**, and a **low fractional excretion of calcium** (FECa) < 0.01.
A diagnostic threshold of FECa less than 0.01 has traditionally been accepted for distinguishing between familial hypocalciuric hypercalcemia and primary hyperparathyroidism. FECa in a **"gray zone"** between 0.01 and 0.02 has been reported in some subjects with FHH; thus, using a strict cutoff of 0.01 may lead to some cases of FHH being missed. Indeed, the use of a higher threshold of 0.02 was shown in a retrospective study to have a **diagnostic sensitivity** of **98% for FHH.**

AVOID THESE PITFALLS

Causes of hypocalciuria should be ruled out prior to diagnosing FHH. These include....
Low calcium diet, **mild renal insufficiency**, **thiazide diuretic**, **lithium exposure**, and **hypovitaminosis D**

REFERENCES

- J.P. Bilezikian Primary hyperparathyroidism J Clin Endocrinol Metab, 103 (11) (2018 Nov 1), pp. 3993-4004
- S.E. Christensen, P.H. Nissen, P. Vestergaard, L. Mosekilde Familial hypocalciuric hypercalcaemia: a review Curr Opin Endocrinol Diabetes Obes, 18 (6) (2011 Dec), pp. 359-370