MANAGEMENT OF HYPERCALCEMIA IN THE ELDERLY

PRETORIA CONTROVERSIES
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INTRODUCTION

- Prevalence in hospitalized 0.01-0.1%
  10 times more in the elderly

- Treatment objectives:
  - Correct the serum calcium
  - Address the cause

- Challenges in the elderly:
  - Clinical presentation
  - Co-morbidities

EVALUATION

1. Detailed history/Review of medications.

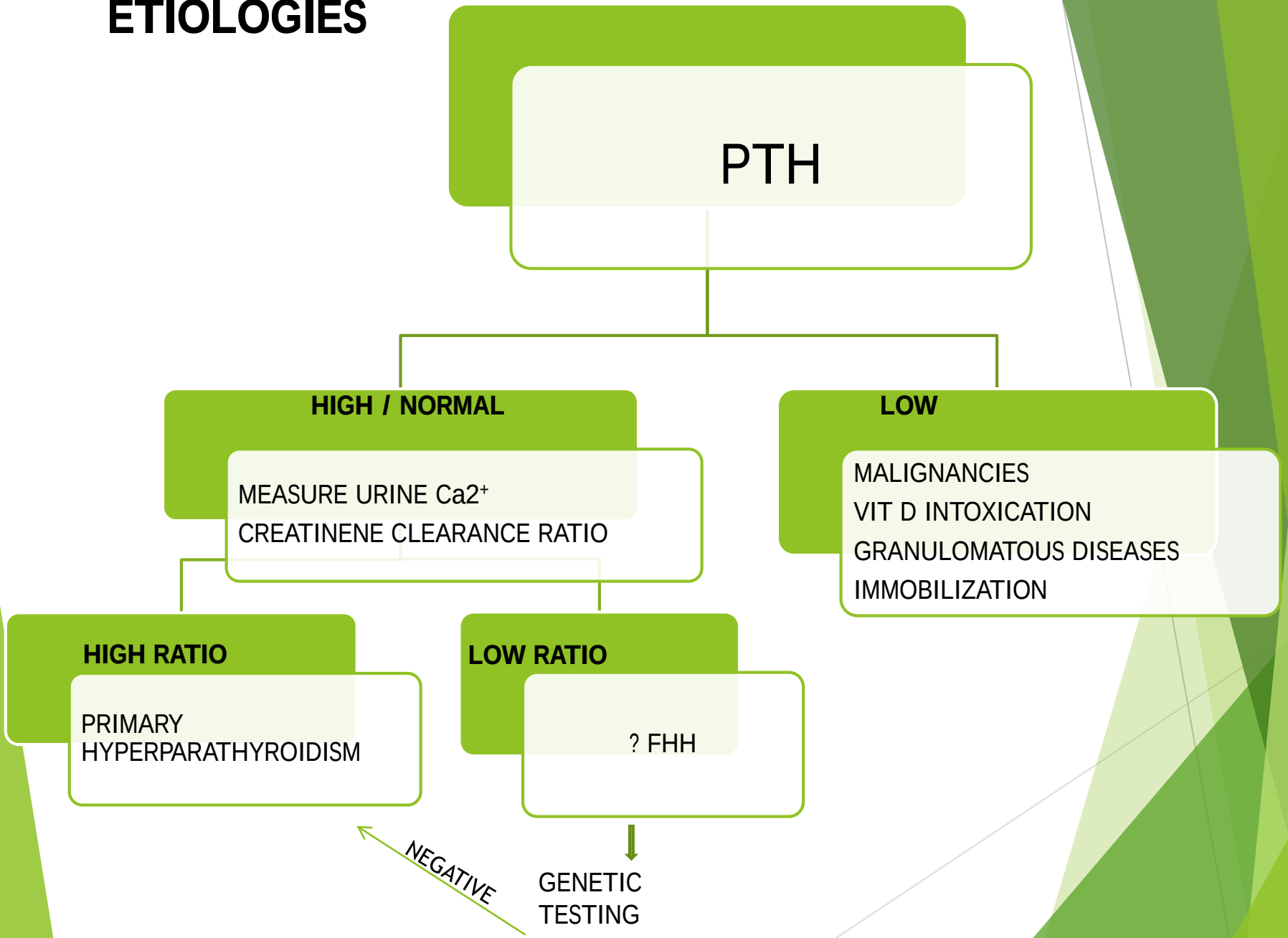
2. Corrected serum calcium levels:

   - <3.0 mmol/L: Mild hypercalcemia
   - 3.0-3.5 mmol/L: Moderate hypercalcemia
   - >3.5 mmol/L: Severe hypercalcemia

3. PTH serum levels

4. Baseline: Phosphorus,25-hydroxyvitamin D,U&E
   PTHrP

ETIOLOGIES


PTH
HIGH / NORMAL
MEASURE URINE Ca2+
CREATININE CLEARANCE RATIO
LOW
MALIGNANCIES
VIT D INTOXICATION
GRANULOMATOUS DISEASES
IMMOBILIZATION
HIGH RATIO
PRIMARY HYPERPARATHYROIDISM
LOW RATIO
? FHH
NEGATIVE
GENETIC TESTING

APPROACH TO TREATMENT

→ Guiding factors:

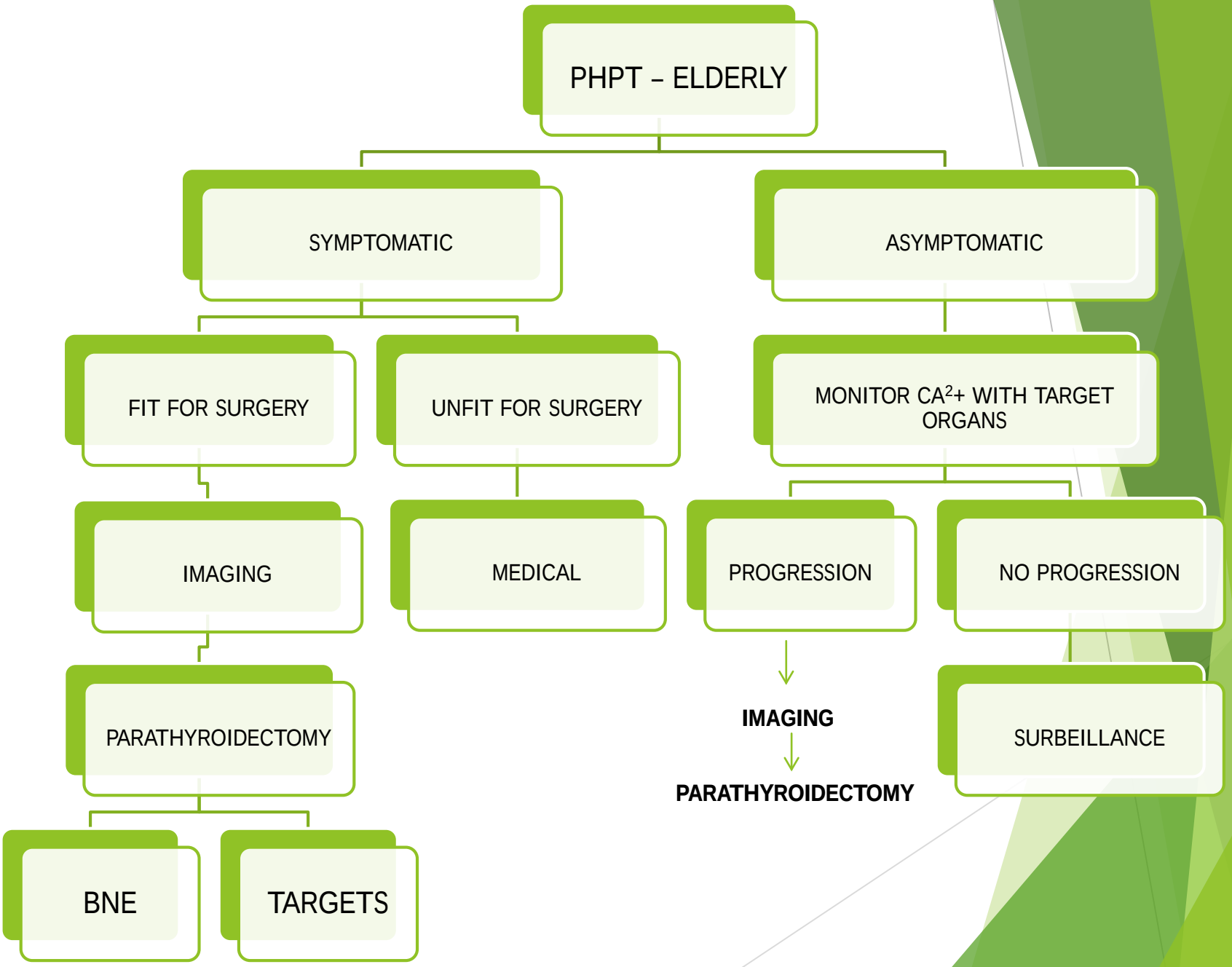
- Severity of hypercalcemia
- ? Clinical manifestations
- Etiology

→ General measures:

- Avoid aggravating factors
- (Asymptomatic or mildly asymptomatic mild-moderate)
- Volume expansion / Isotonic saline
- Calcitonin administration (24 - 48 hrs)
- Intravenous Bisphosphonates / Denosumab sc.
- Hemodialysis

PRIMARY HYPERPARATHYROIDISM OF THE ELDERLY

- 80% asymptomatic
- Indications for surgery not changed by advancing age
- Non specific neurocognitive symptoms not an indication for surgery.


PHPT – ELDERLY
SYMPTOMATIC
ASYMPTOMATIC
FIT FOR SURGERY
UNFIT FOR SURGERY
MONITOR CA2+ WITH TARGET ORGANS
IMAGING
MEDICAL
PROGRESSION
NO PROGRESSION
PARATHYROIDECTOMY
IMAGING
PARATHYROIDECTOMY
SURBEILLANCE
BNE
TARGETS

INDICATIONS FOR PARATHYROID SURGERY DURING MONITORING

- Serum calcium (>upper limit of >1 mg/dl. (>0.25 mmol/L) normal.

- Skeletal
  A. T-score <-2.5 at lumbar spine, total hip, femoral neck, or distal 1/3 radius; or a significant reduction in BMD[a]
  B. Vertebral fracture by x-ray, CT, MR, or VFA

- Renal.
  A. **CrC1 < 60 cc/min**
  B. **Clinical development of a kidney stone or by imaging (x-ray, ultrasound, or CT)**

REFERENCES

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