

APPENDIX B

PH TYPE

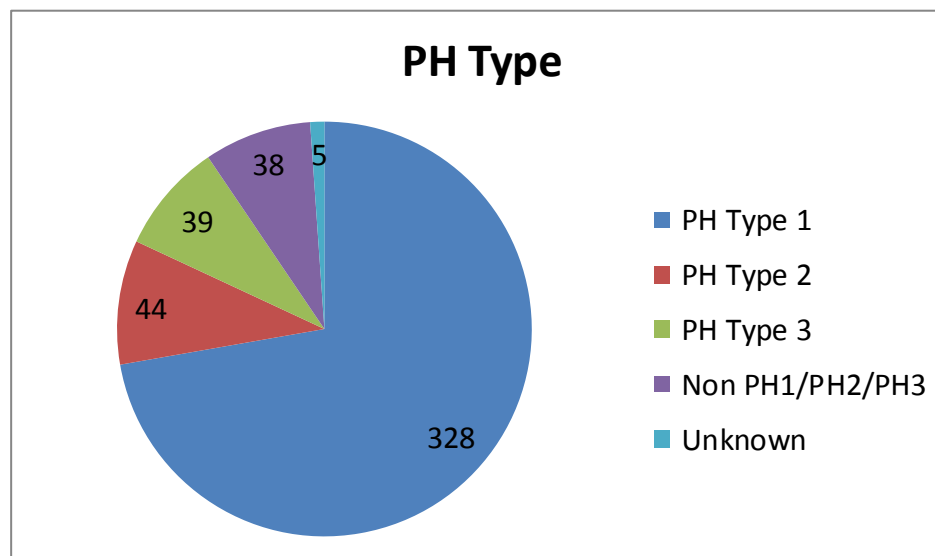
There are at least 3 forms of primary hyperoxaluria.

- **Type I is caused by mutations of the AGXT gene. These mutations result in a deficiency of the enzyme alanine glyoxylate transferase (AGT) which is found only in the liver.**
- **Type II is caused by mutations of the GRHPR gene. These mutations result in a deficiency of the enzyme glyoxylate reductase/hydroxypyruvate reductase (GR/HPR) found in the liver and other tissues.**
- **Type III is caused by mutations of the HOGA1 gene (formerly DHDPSL) found in the liver.**

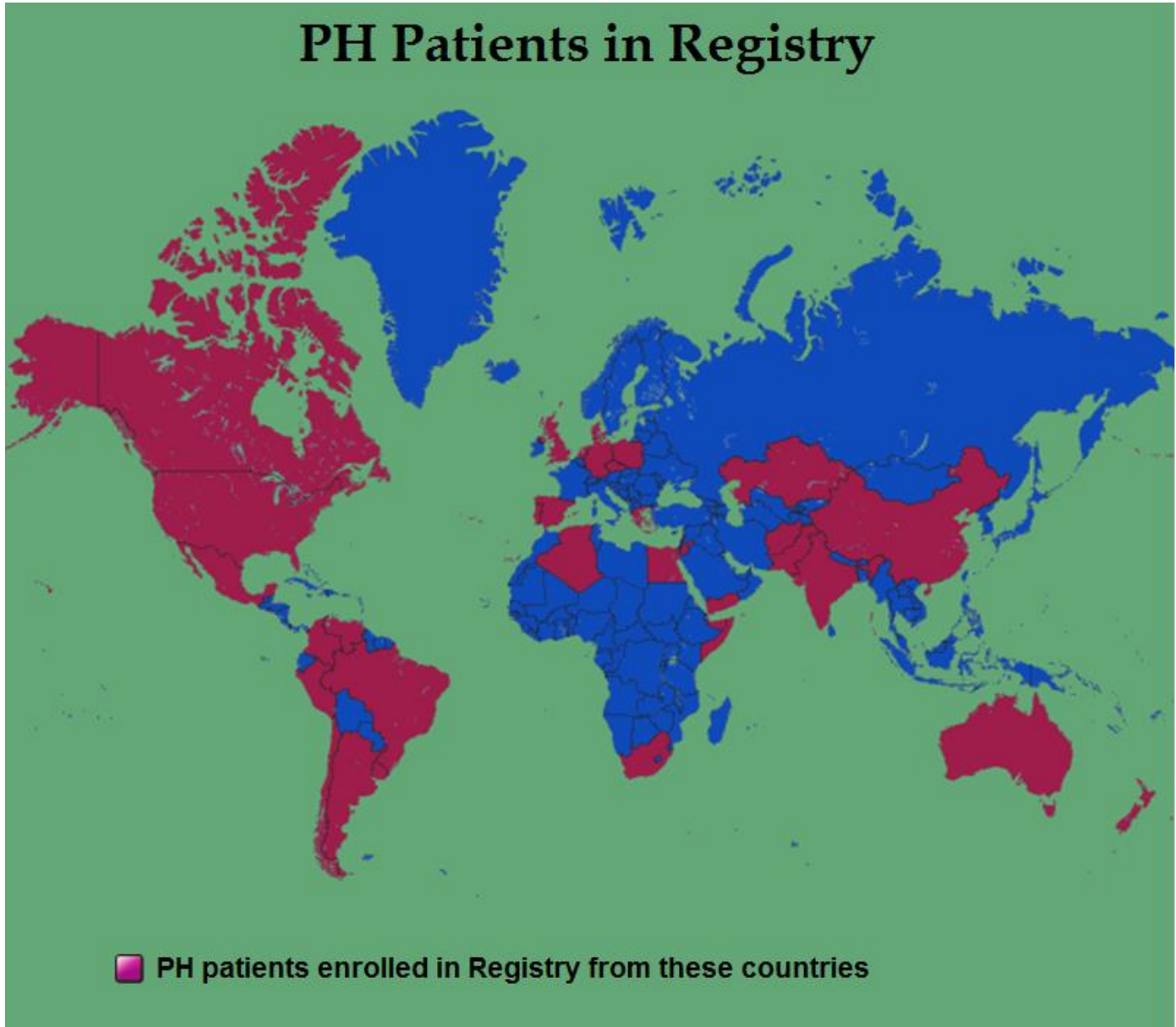
Type of PH	Number	Percent
PH 1	328	72
PH 2	44	10
PH 3	39	9
NON PH1,2,3	38	8
Unknown	5	1

Of the 454 patients in the registry as of July 2015:

- **328 patients (72%) have Primary Hyperoxaluria Type I**
- **44 patients (10%) have Primary Hyperoxaluria Type II**
- **39 patients (9%) have Primary Hyperoxaluria Type III**
- **38 patients (8%) do not have known mutations for Primary Hyperoxaluria I, II or III**



COUNTRY

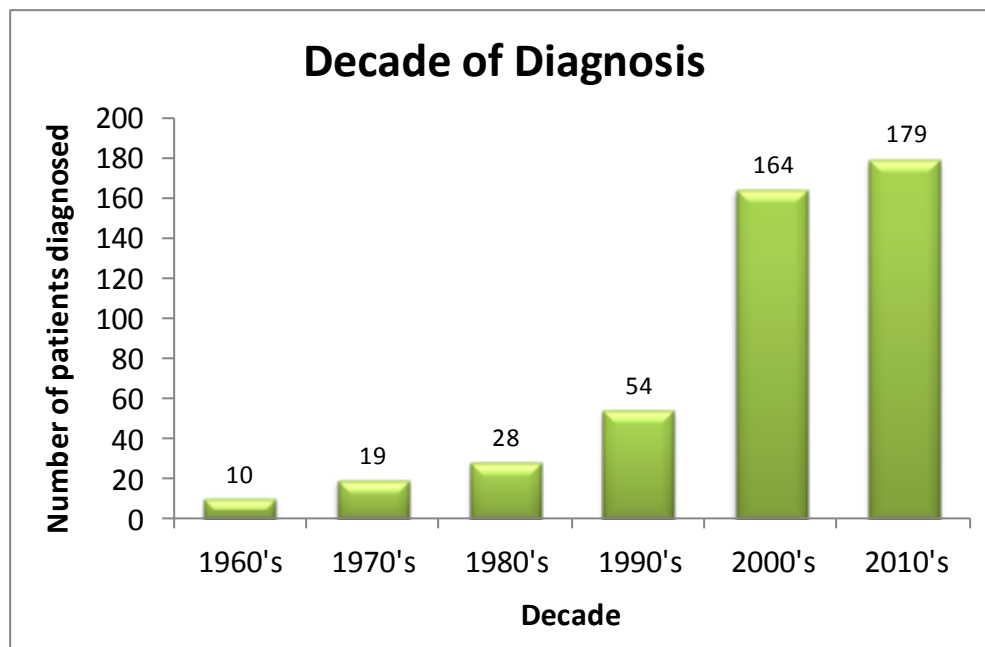


DECADE OF DIAGNOSIS

Decade	Number	Percent
1960's	10	2
1970's	19	4
1980's	28	6
1990's	54	12
2000's	164	36
2010's	179	39

Of the 454 patients in the registry as of July 2015:

- 10 patients (2%) were diagnosed in the 1960's
- 19 patients (4%) were diagnosed in the 1970's
- 28 patients (6%) were diagnosed in the 1980's
- 54 patients (12%) were diagnosed in the 1990's
- 164 patients (36%) have been diagnosed since the year 2000
- 179 patients (39%) have been diagnosed since the year 2010

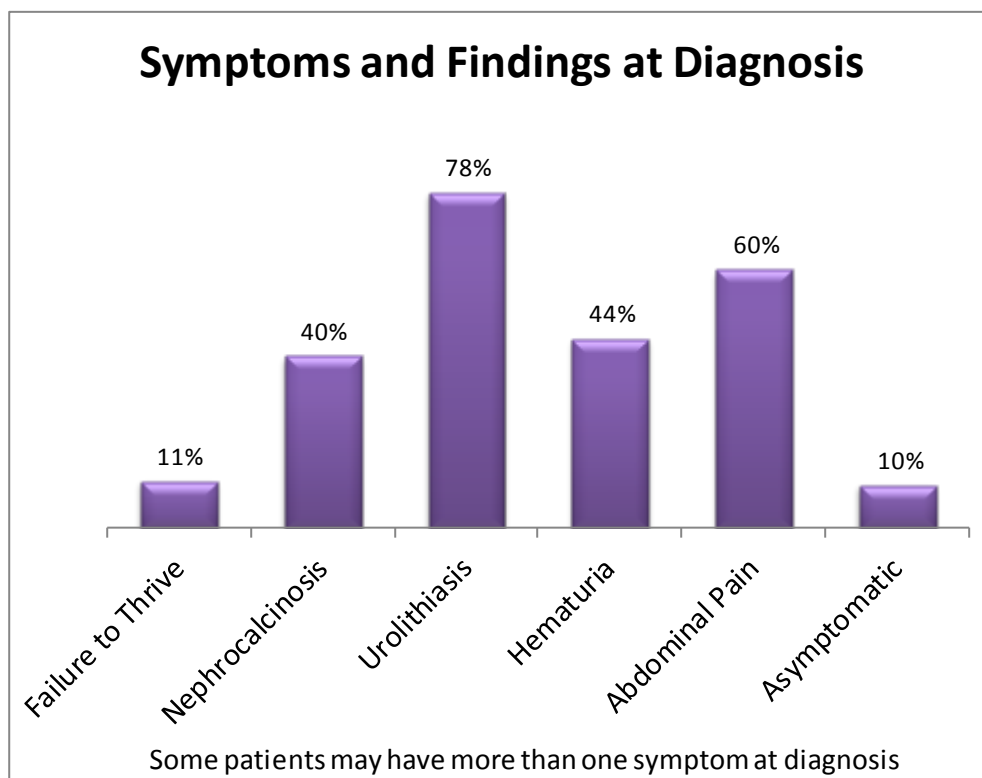


SYMPTOMS AND FINDINGS

Symptoms and Findings	Percent Present
Failure to Thrive	11
Nephrocalcinosis	40
Urolithiasis	78
Hematuria	44
Abdominal Pain	60
Asymptomatic	10

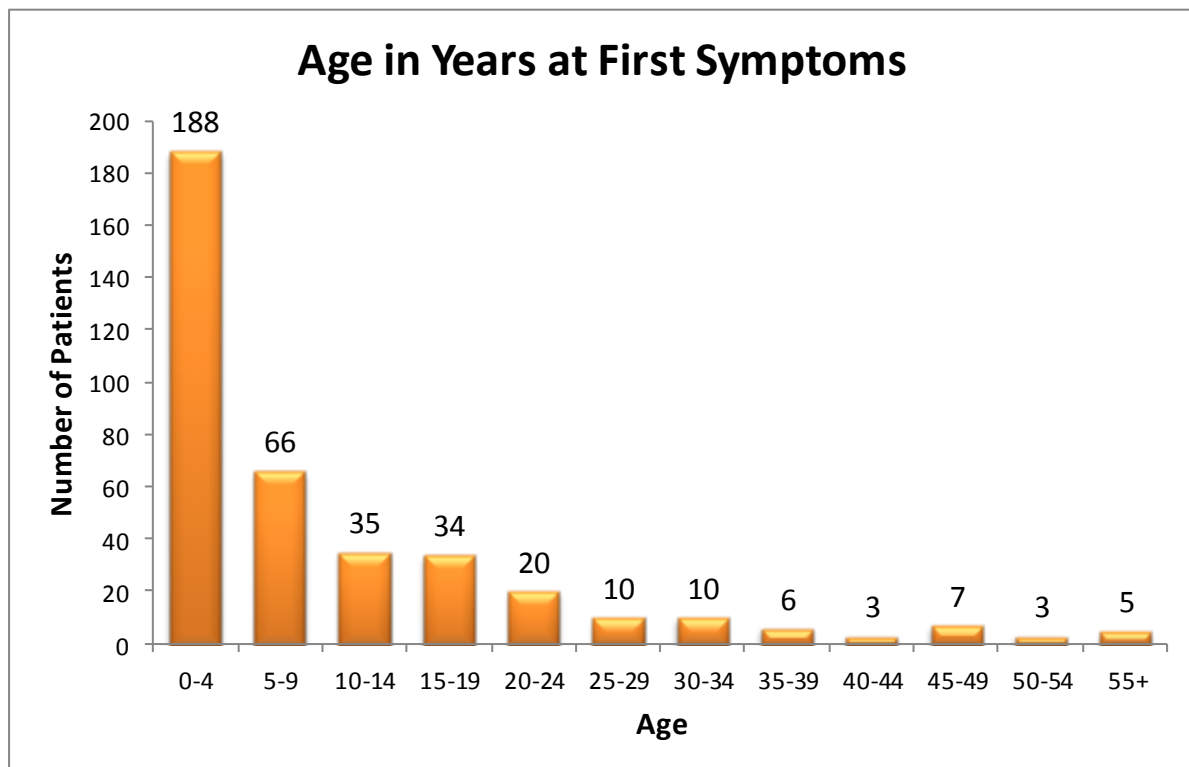
Of the 454 patients in the registry as of July 2015:

- 11% of the patients had failure to thrive (low height and weight) at diagnosis
- 40% of the patients had a history of nephrocalcinosis (when the kidneys are extensively filled with calcium oxalate crystals that can often cause loss of the kidneys.)
 - 78% of the patients had a history of urolithiasis (kidney stones)
 - 44% of the patients had a history of hematuria (blood in the urine)
 - 60% of the patients had a history of abdominal pain
- 10% of the patients were asymptomatic (had no symptoms at all) at diagnosis



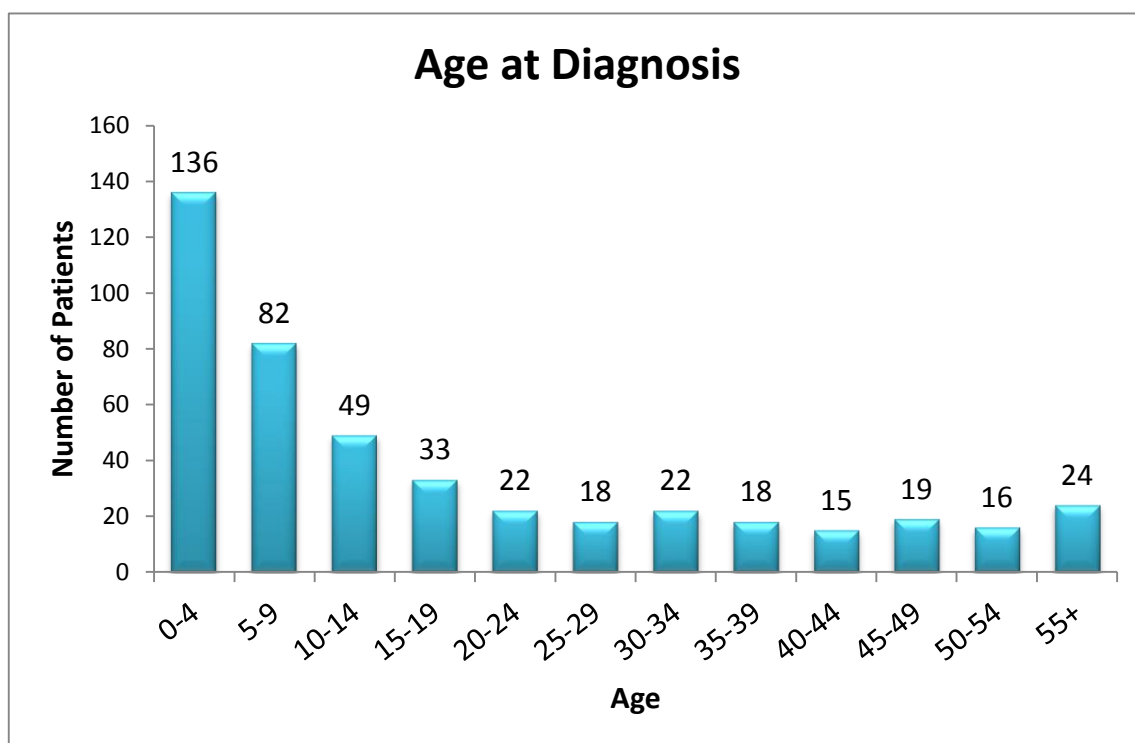
Of the 454 patients in the registry as of July 2015:

- **Approximately 188 patients had their first symptom between the ages of 0-4**
- **Approximately 66 patients had their first symptom between the ages of 5-9**
- **Approximately 69 patients had their first symptom between the ages of 10-19**
 - **Most patients have symptoms before the age of 25**



Of the 454 patients in the registry as of July 2015:

- 136 patients were diagnosed between the ages of 0-4
- 82 patients were diagnosed between the ages of 5-9
- The chart shows that a large percentage of diagnoses are made before a patient's 25th birthday
 - Many patients are diagnosed before age 10



Of the 454 patients in the registry as of July 2015:

