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## Background

It was thought that osteoporosis is adults' health problem; however, recently an attention to childhood and adolescence low bone density has been increased. The only medication that can be used to improve bone mass is with anti-resorptive therapy with bisphosphonates. However, there is still limited evidence based for the use of bisphosphonates (BP) in children with secondary osteoporosis.

## Objectives

To review trends in bisphosphonate (BP) use in children with secondary osteoporosis attending a tertiary paediatric endocrine unit (2002-November 2013).

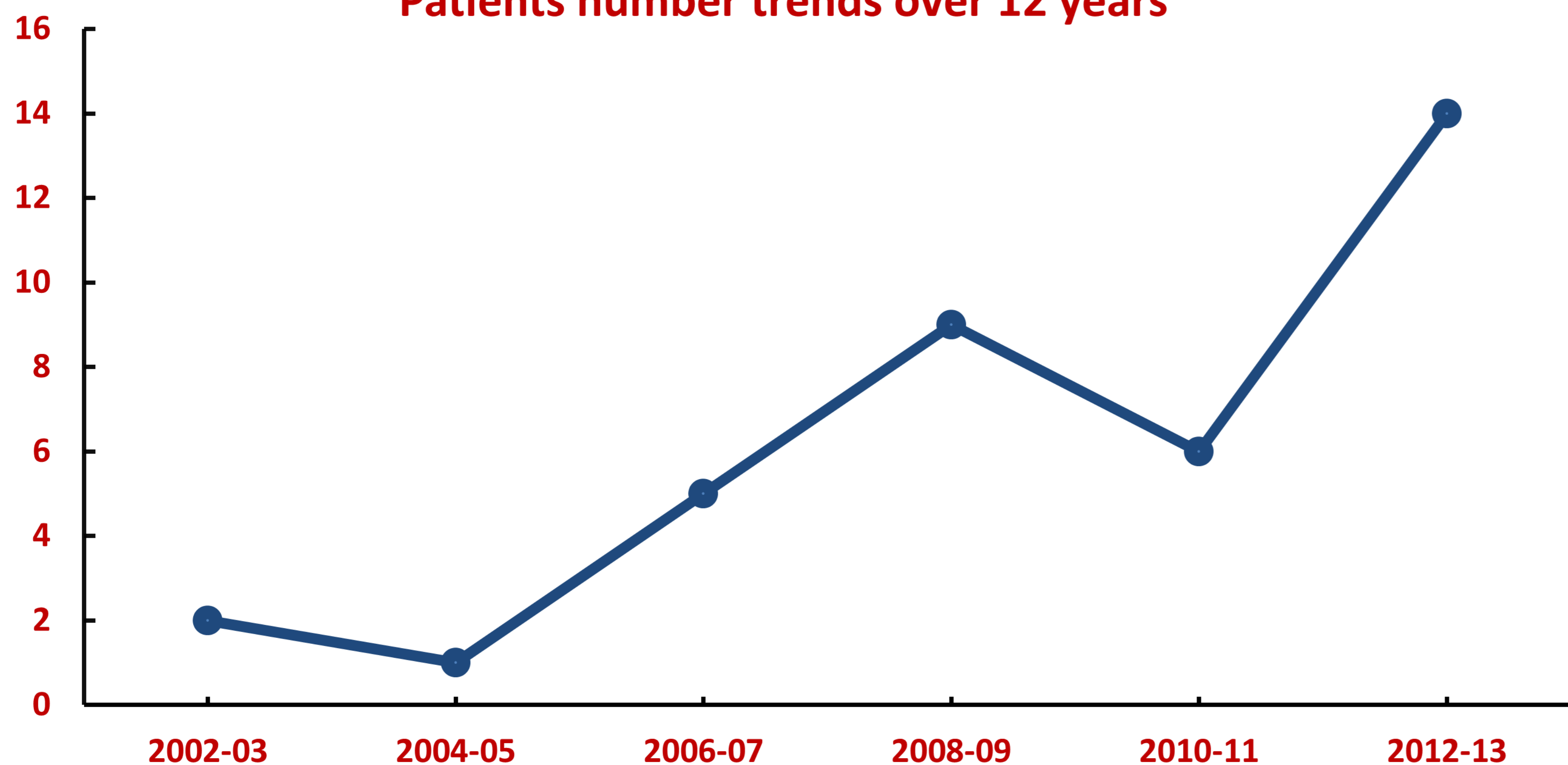
## Methods

Data were gathered from a combination of a clinical and pharmacy database. Results reported as median (range)

## Results

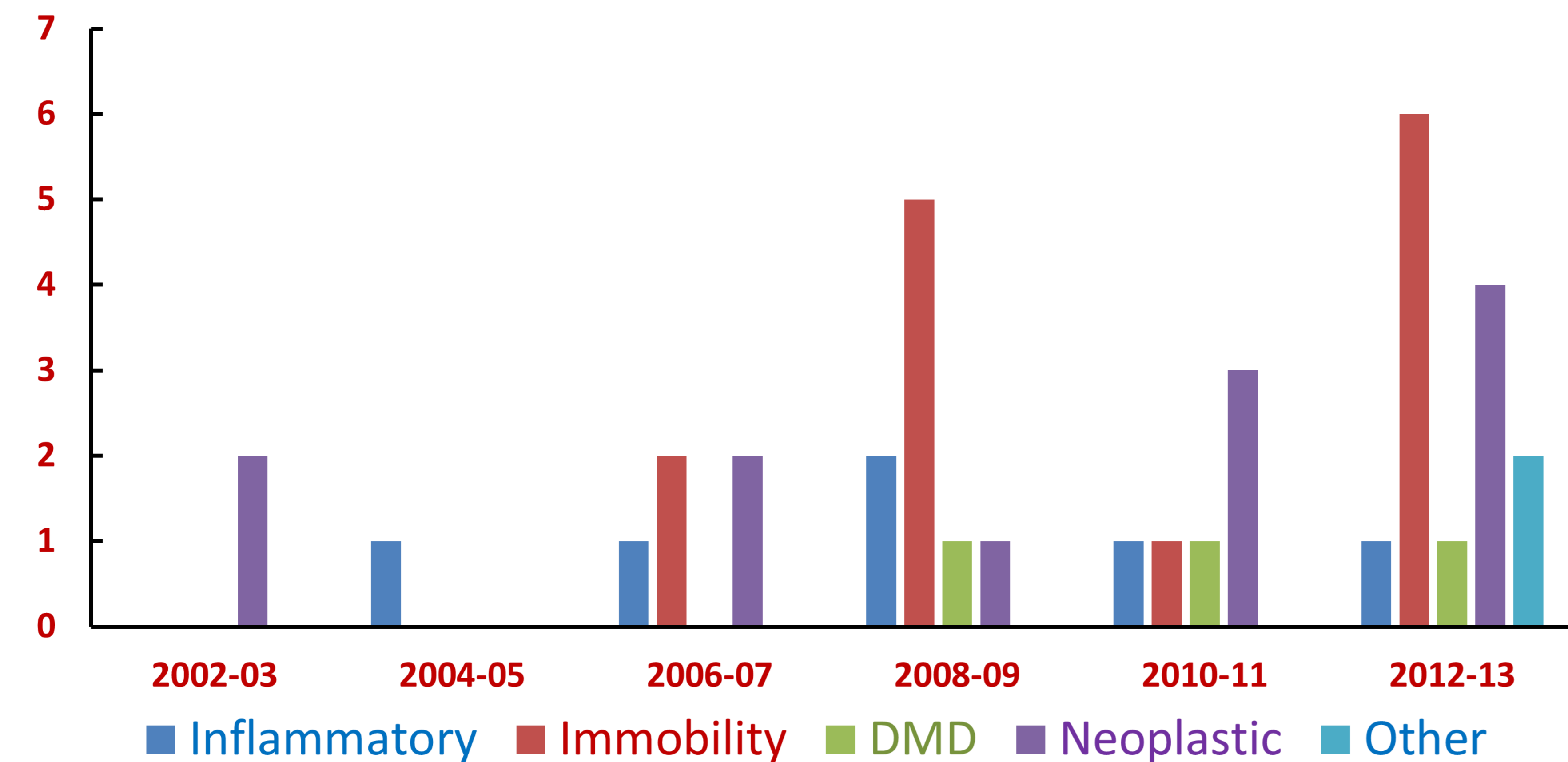
A total of 37 children (20 M) commenced on bisphosphonates treatment over the 12-year period, median age 11.3 years (3.1-18.4).

### Patients number trends over 12 years

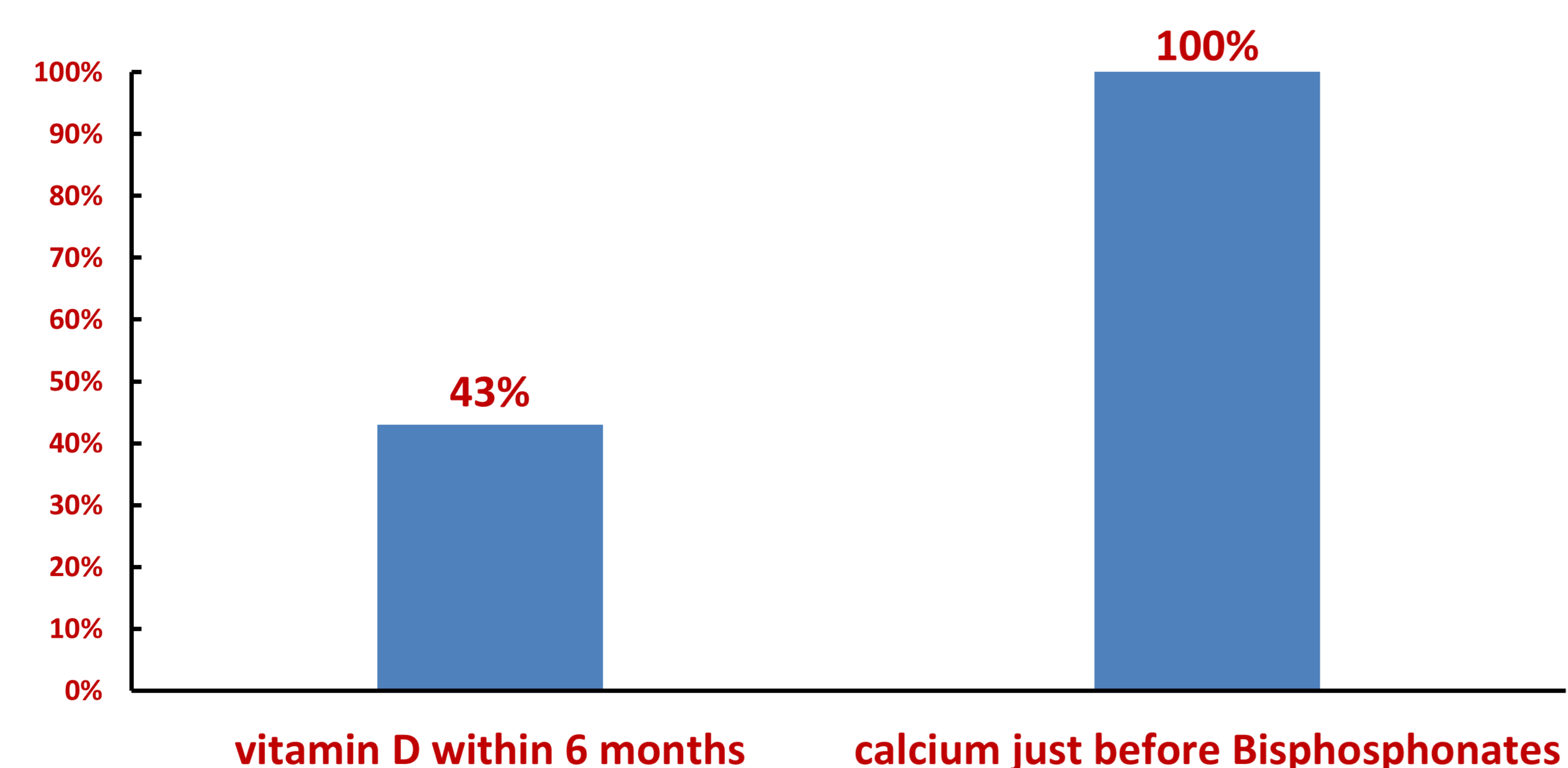


	2002-03	2004-05	2006-07	2008-09	2010-11	2012-13
Pamidronate	2	1	6	9	4	6
Zoledronate	0	0	0	0	1	8

### Trends of diagnosis over years

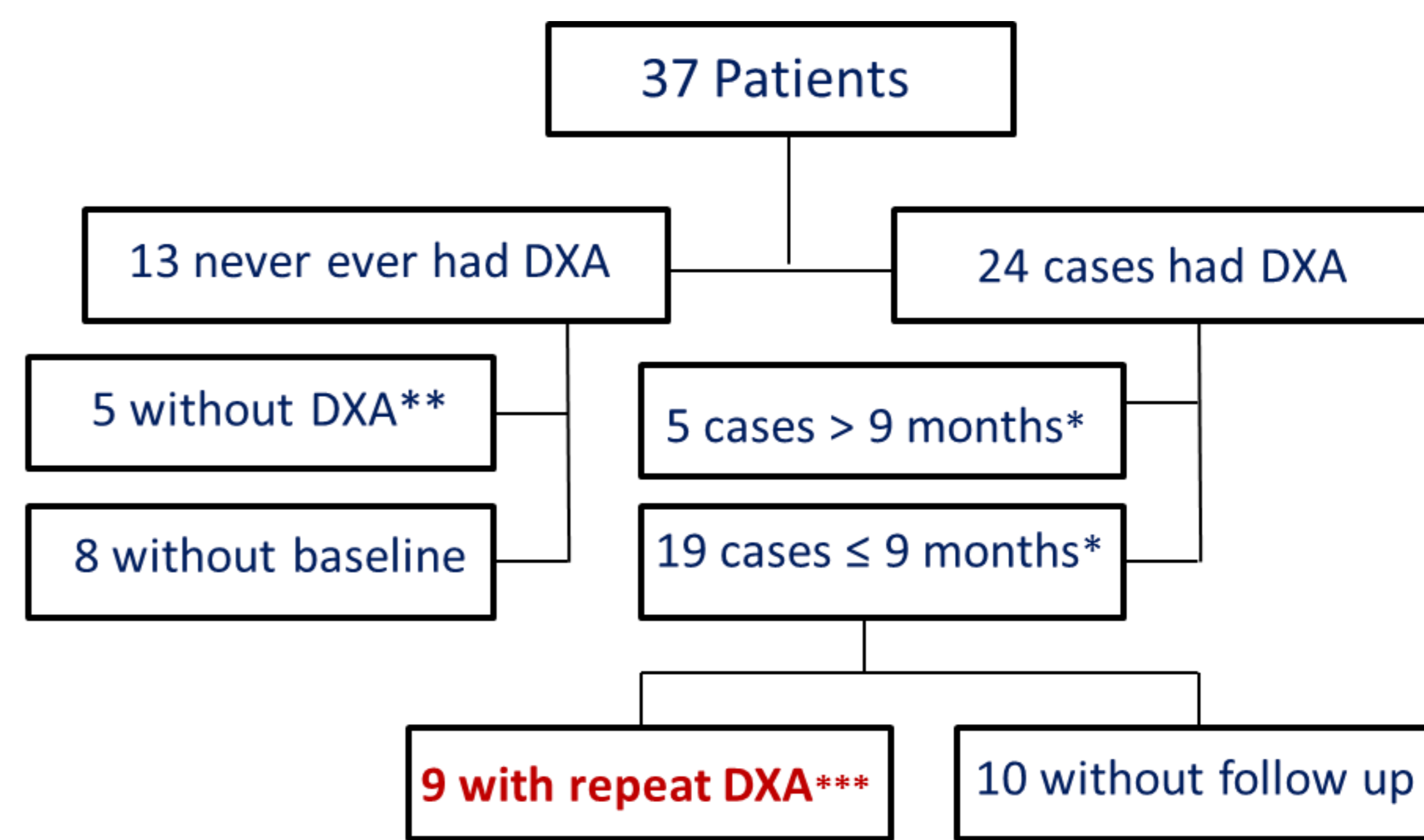


### Investigations before starting the treatment



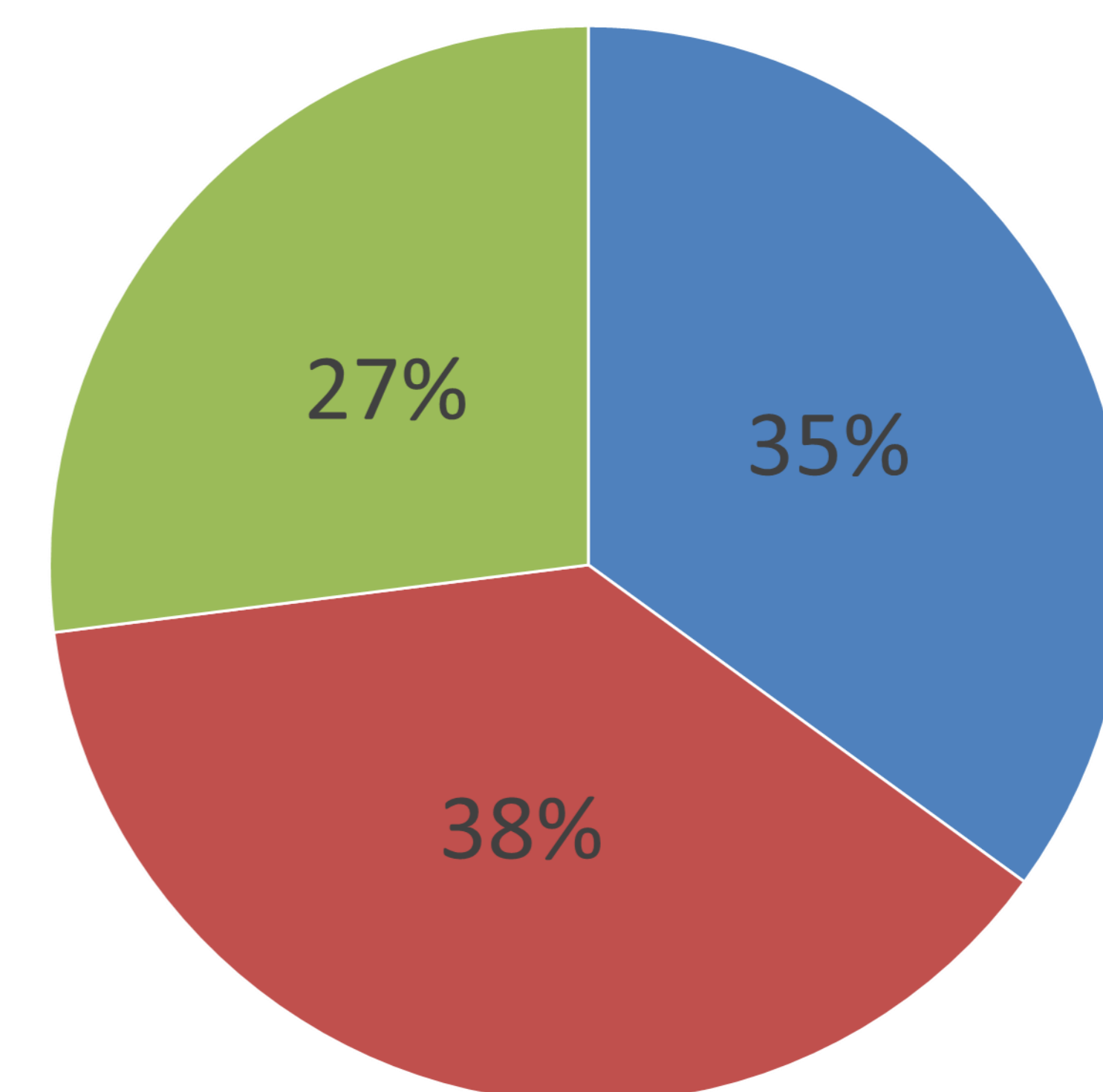
## Results continued

### Cases selection flow chart from DXA reports



- \* Before bisphosphonates starting date
- \*\* had significant disability with difficulties lying still for a scan (4 cerebral palsy and 1 Infantile Batten's).
- \*\*\* Repeat DXA on Bisphosphonates.

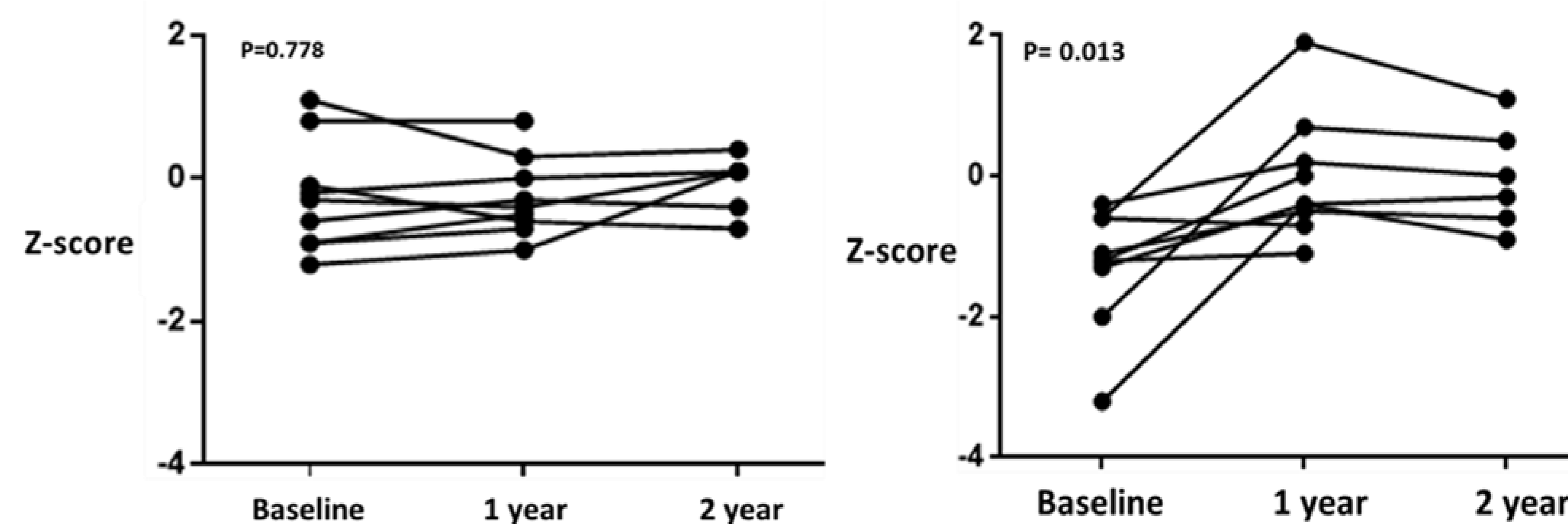
### Fractures prior to treatment



- multiple vertebral fracture
- repeated appendicular fractures
- single appendicular fracture

Single appendicular fractures patients were 3 cerebral palsy 3 Acute Lymphoblastic Leukaemia, 1 Juvenile Inflammatory Arthritis & 1 Asthma

### Total body & Lumbar spine DXA Z-scores trend over 2 years of BP treatment



- Median lumbar spine bone mineral content Z score adjusted for bone area increased from -1.2 (-3.2, -0.4) at baseline to -0.4 (-1.1, 1.9) at 12 months [p= 0.01].
- 9/13 (69%) of those with vertebral fractures had repeat spine x-rays during treatment. None of them showed vertebral reconstitution.

## Conclusion

This is the first audit of the use of bisphosphonates in childhood secondary osteoporosis and shows:

- (1) The number of children commenced on bisphosphonates therapy is increasing over the last 12 years.
- (2) Challenges in monitoring children with significant disability
- (3) Despite improvement in DXA bone mineral content, vertebral reconstitution was not seen in those with vertebral fractures.