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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).

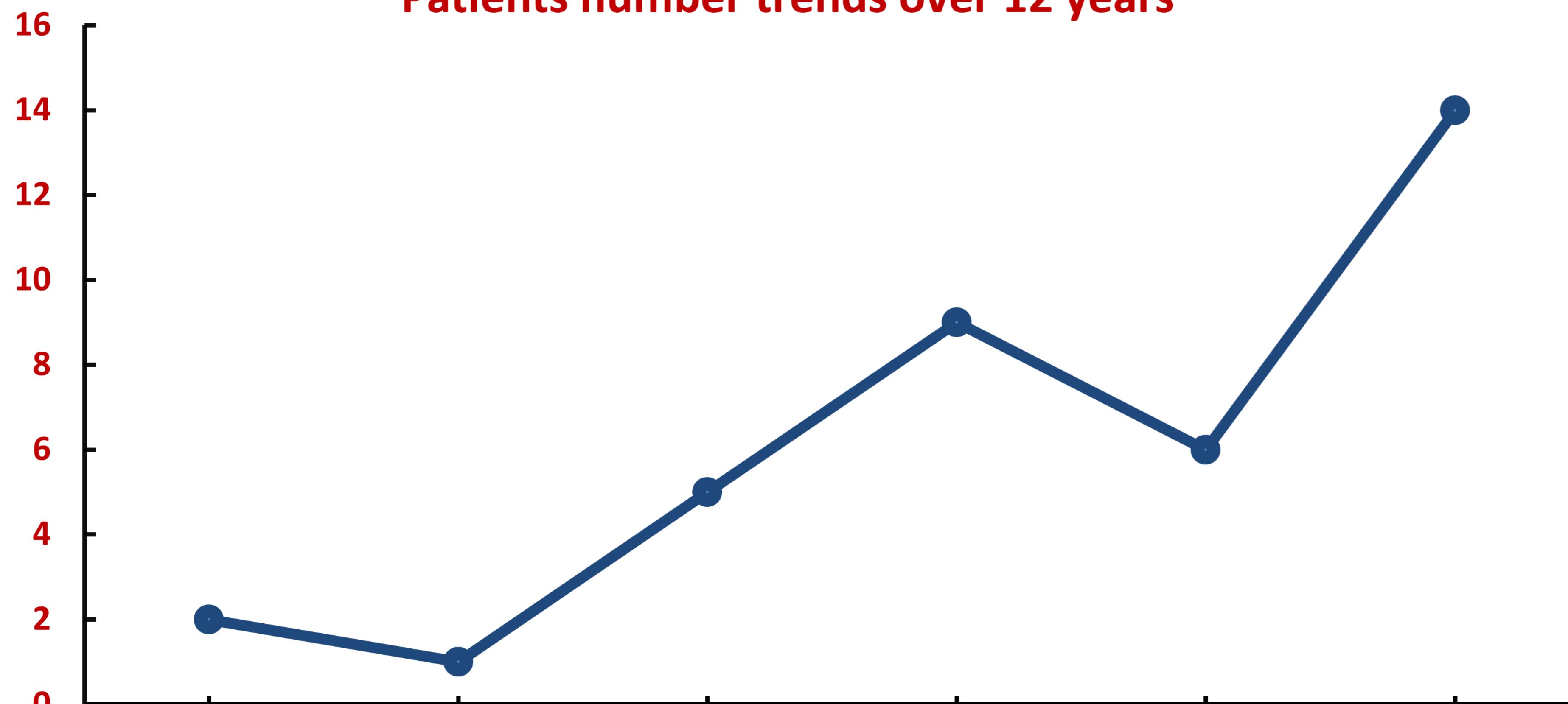
Methods

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

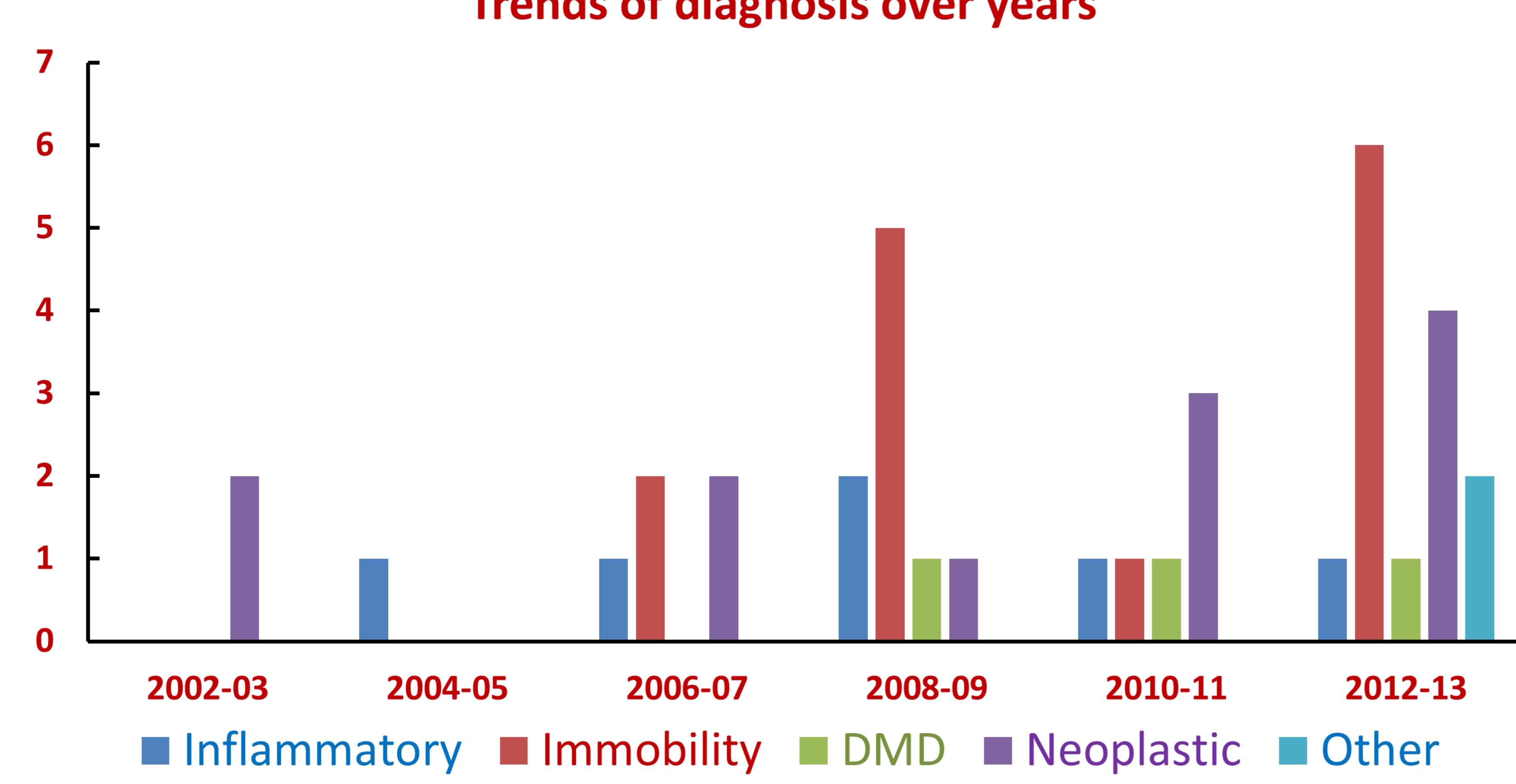
Results

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).

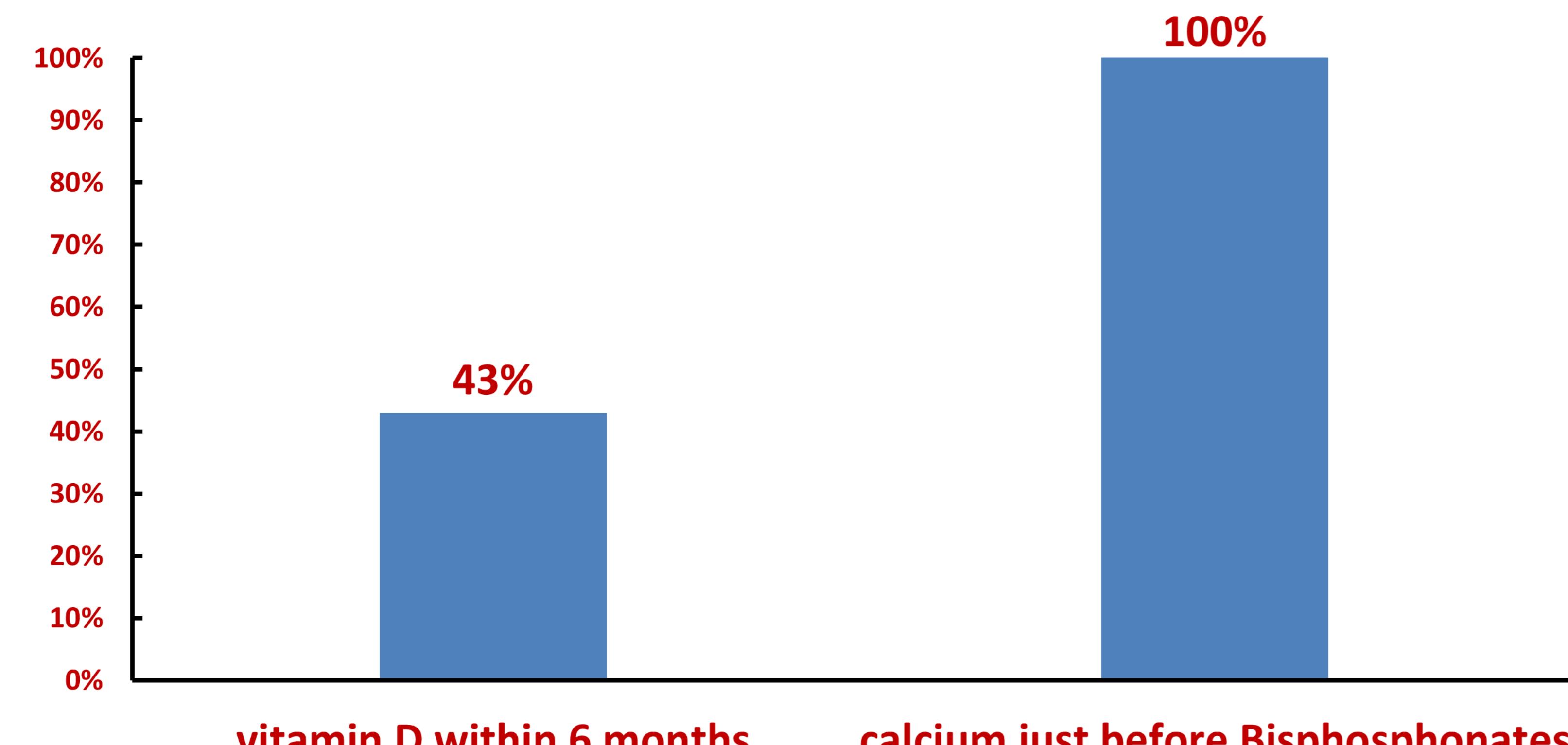
Patients number trends over 12 years



Trends of diagnosis over years

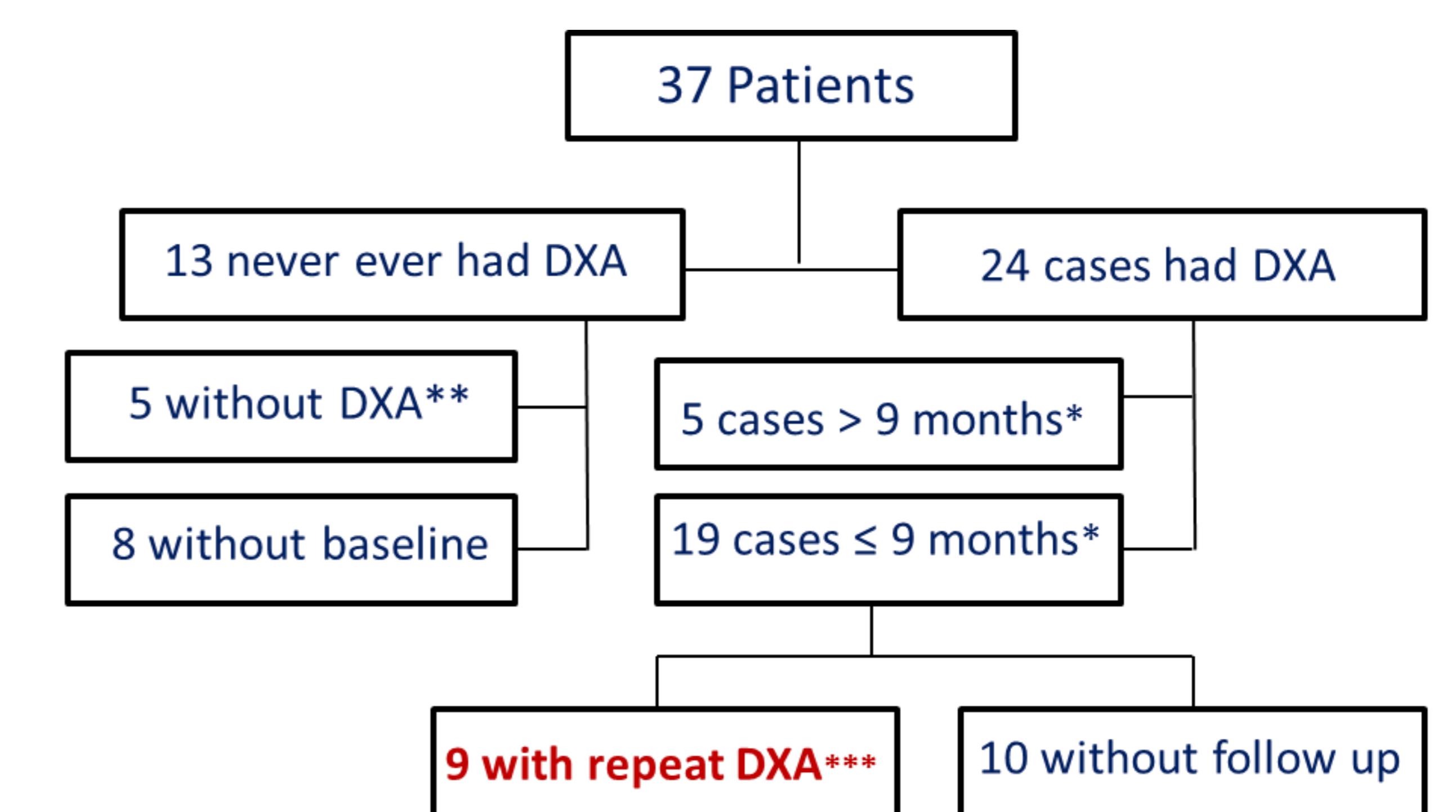


Investigations before starting the treatment



Results continued

Cases selection flow chart from DXA reports

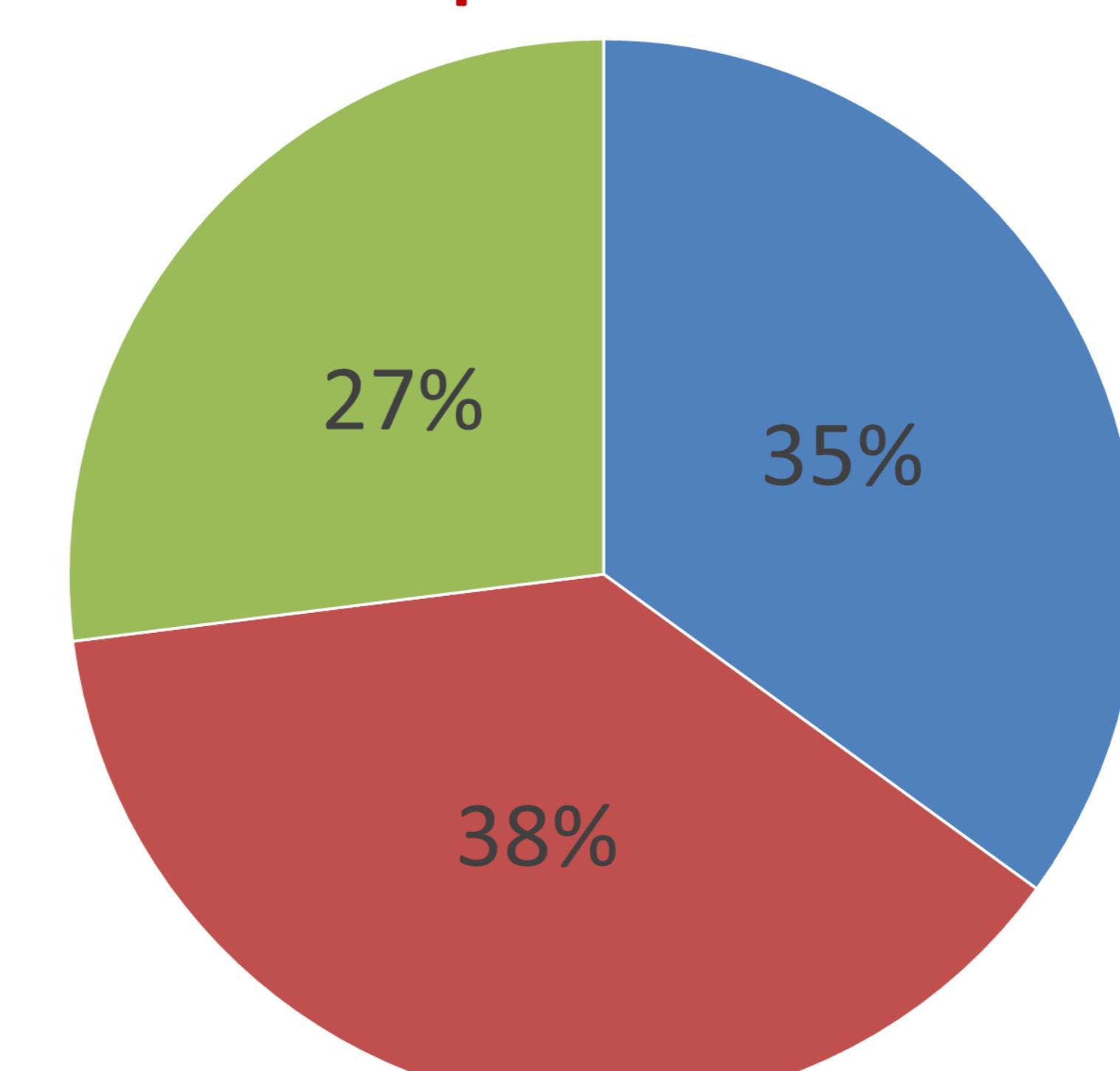


* Before bisphosphonates starting date

** had significant disability with difficulties lying still for a scan (4 cerebral palsy and 1 Infantile Batten's).

*** Repeat DXA on Bisphosphonates.

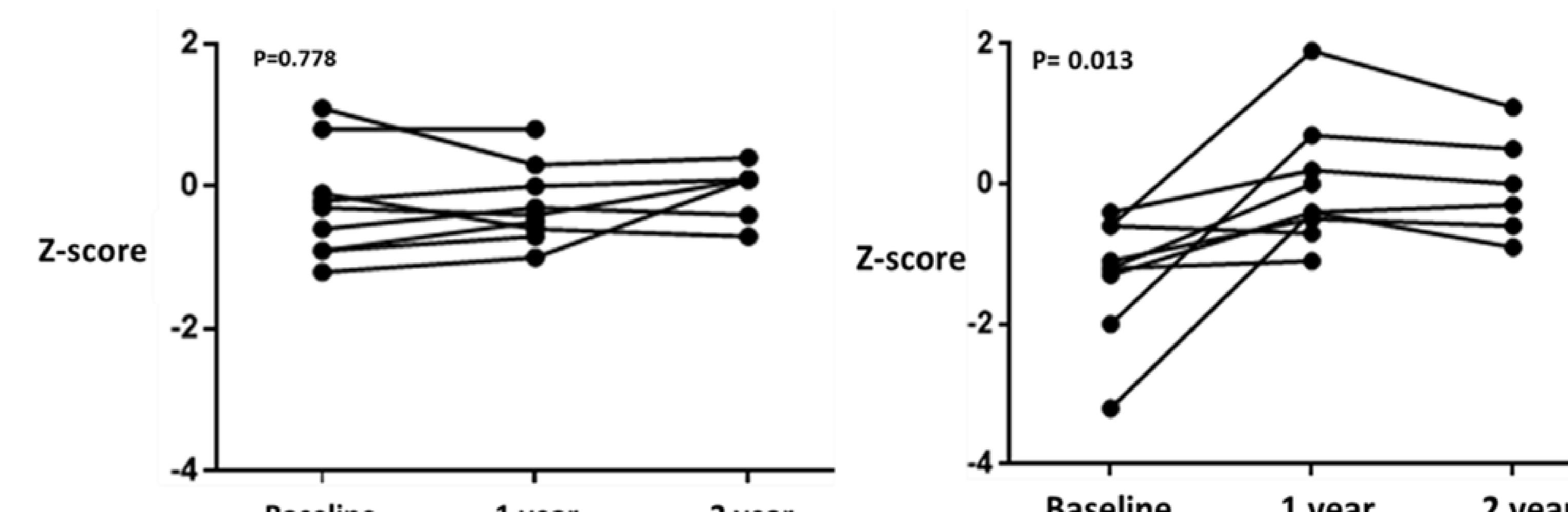
Fractures prior to treatment



■ 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:

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