

Comparison of cost benefits and efficacy of Zoledronic acid and Pamidronate in the treatment of Osteogenesis Imperfecta in children

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The authors declare no potential conflict of interest.

BACKGROUND

Intravenous (IV) Pamidronate (PAM) has been used in the treatment of Osteogenesis Imperfecta (OI) and is known to increase bone mineral density (BMD) and reduce the incidence of fractures.¹

An attractive alternative is the more potent IV Zoledronic acid (ZOL).²

OBJECTIVES

To determine the clinical efficacy of IV PAM vs ZOL in children with mild to moderate OI.

To compare the cost benefits of the two drugs.

METHOD

A retrospective review of patients aged ≥ 5 years with Type I or IV OI, who started either PAM or ZOL (2001 – 2014) at a tertiary centre was conducted.

PAM was administered in cycles of 1.5mg/kg/day over 2 days every 3 months and ZOL as a single dose of 0.05mg/kg 6 monthly.

Lumbar Spine (LS) DXA was performed pre and 1 year post treatment.

Cost analysis was performed for a 5 year period based on drug cost, nursing and medical time, equipment and days in hospital per year (8 vs. 2 days/ year, for PAM vs. ZOL).

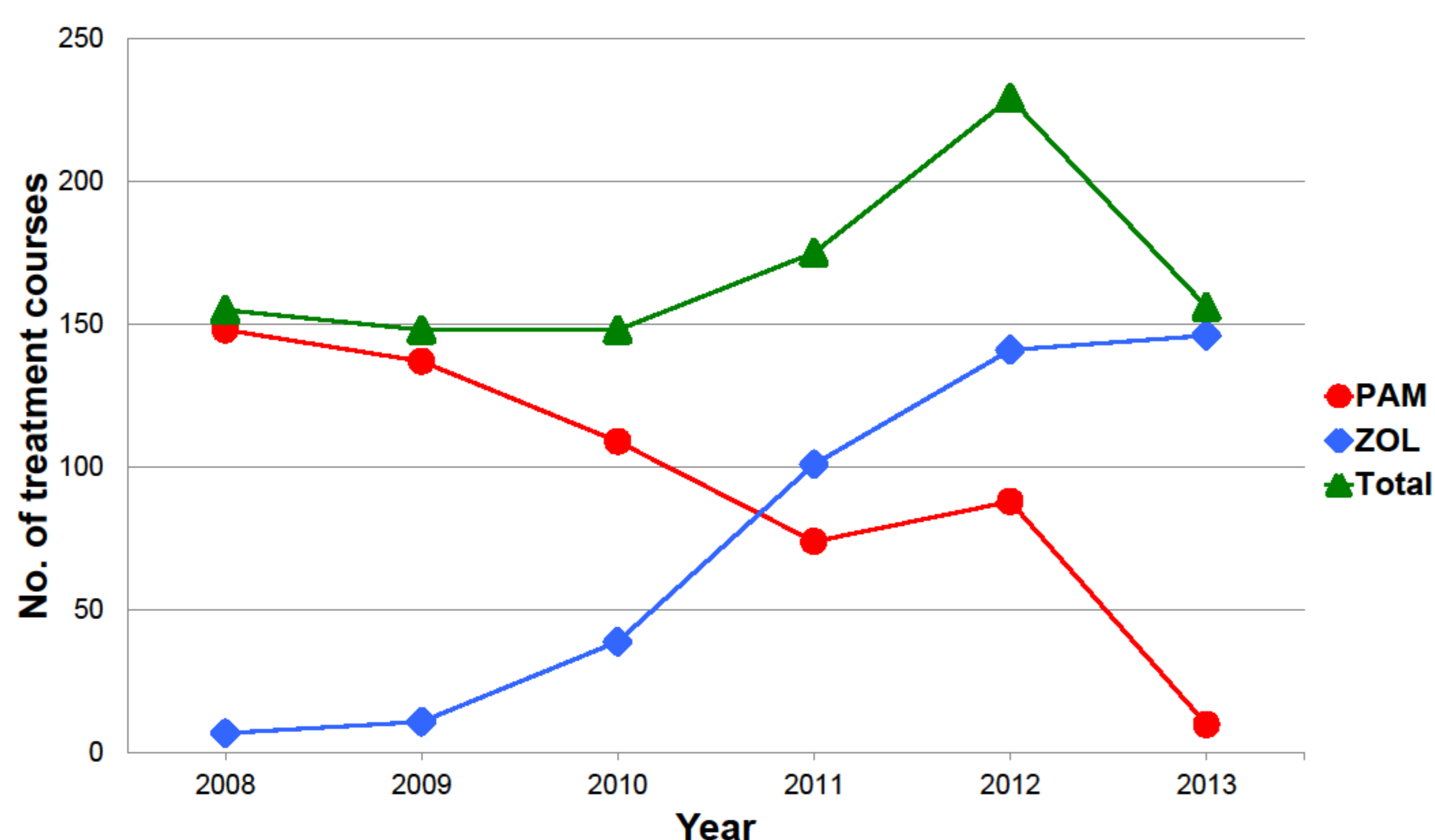


Figure 1: Annual treatment courses of bisphosphonate

RESULTS

A total of 40 patients were identified, 20 in each group.

1 year post treatment, LS BMAD z-scores increased significantly in both groups ($p < 0.001$). The median (interquartile range) increase in LS BMAD z-score for the PAM group [1.67 (1.46-2.21)] and the ZOL group [1.75 (1.46-2.00)] was not significantly different.

Total cost per treatment course per patient was £1157 for PAM and £498 for ZOL.

Annual costs for bisphosphonate therapy per course since the introduction of ZOL halved from £1128 in 2008 to £540 in 2013 (Figure 2).

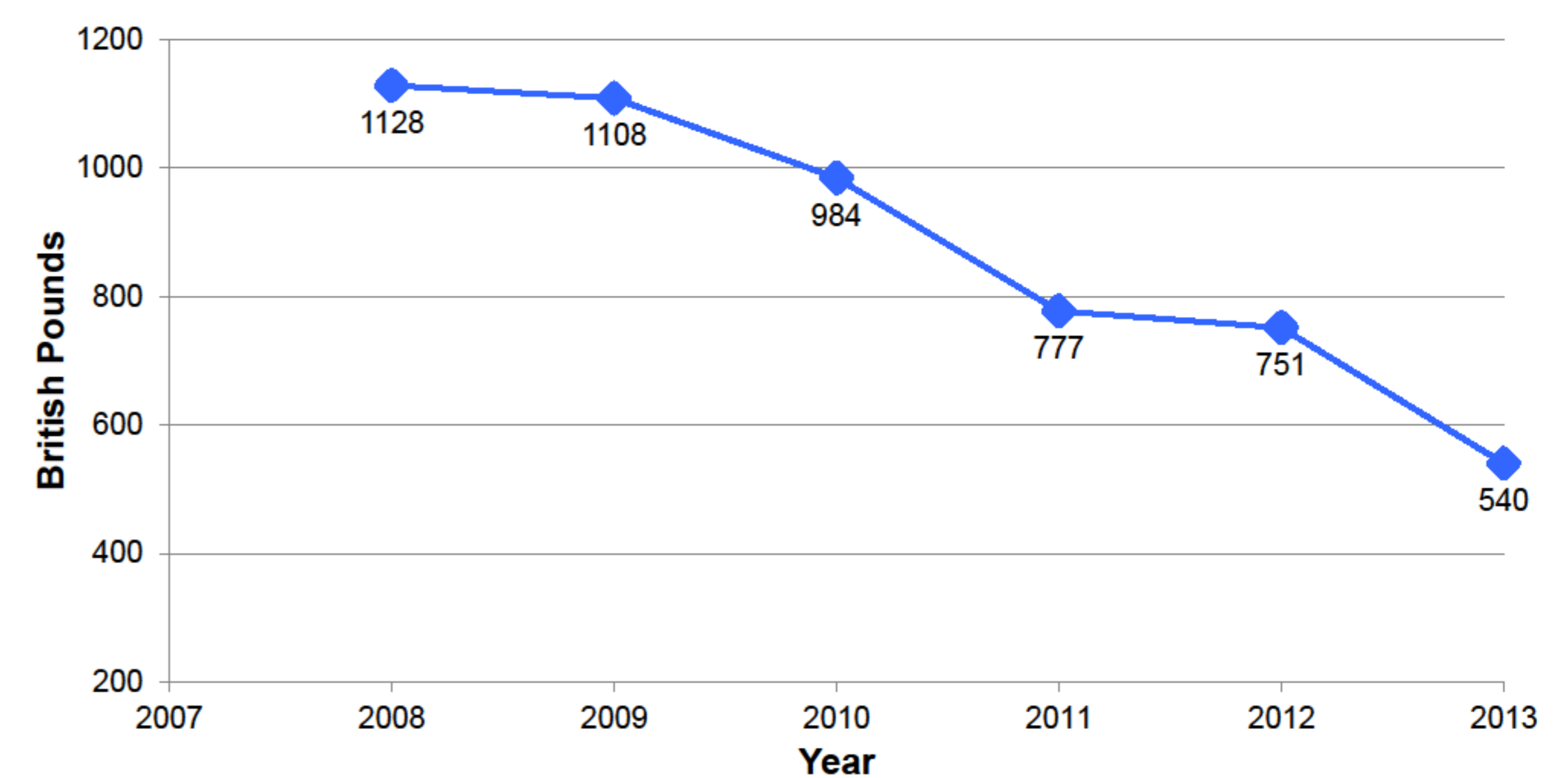


Figure 2: Annual reduction in cost per treatment course in British Pounds

CONCLUSION

ZOL is a significantly cheaper alternative to PAM with comparable efficacy, resulting in substantial annual savings for health care providers.

ZOL is also a more convenient option for patients due to fewer hospital visits, less time off school for patients and leave from work for carers.

REFERENCES

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