

PostScript

LETTERS

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Oral clodronate as treatment of osteogenesis imperfecta

The benefits of treatment with intravenous pamidronate in osteogenesis imperfecta (OI) have recently been reported.¹⁻³ These include reduced bone resorption, increased bone density, and improved clinical outcomes as judged by apparently lower fracture rates. We would like to report a single case of OI treated by the orally administered bisphosphonate, clodronate, with good effect.

A boy, whose mother was affected with clinically diagnosed type 1 osteogenesis imperfecta, was referred to our unit aged 13½ with a recent onset of severe back pain that had required hospital admission. He appeared of normal stature with blue sclerae and was able to walk independently. He had sustained four previous limb fractures; lateral radiographs of the thoracic and lumbar spine confirmed three vertebral wedge fractures. He was 158.9 cm tall (10th centile) and weighed 49 kg (25th centile). Lumbar spine bone mineral density scanning by dual x ray absorptiometry (DXA, Hologic QDR-1000, Hologic, Bedford, MA) revealed a BMD of 0.398 g/cm² (Z score -5.22, comparing his value to the average young man). Fasting urinary hydroxyproline/creatinine ratio, an index of bone resorption, was 96.6.

With informed parental consent for "off label" usage, he was commenced on oral sodium clodronate (Bonafos, Leiras Oy, Turku, Finland) at a dose of 400 mg daily. Dietary intake of calcium and vitamin D was above the estimated average requirement and supplementation was not given. Subsequent BMD scanning after one year of therapy showed an improvement of bone density by 7.8% to 0.468 g/cm² with a consequent increase in the BMD Z score to -5.09.

Treatment with clodronate was continued for five years, during which time he did not

sustain any new low trauma fractures. By the end of treatment, his BMD was 0.552 and his Z score had improved from -5.22 at first referral to -4.59. The fasting urinary hydroxyproline:creatinine ratio was decreased by 86% compared to baseline (13.6 v 96.6). Clodronate was discontinued for eight months; during this time his BMD remained stable but the Z score showed a small decline. His height at that stage lay on the 50th centile (176 cm) and his weight on the 10th (58 kg). The BMD remained considerably below the normal value and clodronate was recommenced at a dose of 800 mg daily.

Eight years after initial referral, his bone mineral density had increased by 60.6% to 0.613 g/cm² (Z score -4.16). To compensate for the expected increase in bone size, the bone mineral adjusted density (BMAD) was computed (BMD_{L1-4}/square root of area_{L1-4}) and showed an improvement of 24.6% in BMAD over the duration of therapy. Clodronate was discontinued when the patient was aged 22. He had reached a height of 177.4 cm and a weight of 60.8 kg, and the spine BMD Z score was -3.92. He had suffered no atraumatic fractures since commencing oral clodronate.

The rationale in using bisphosphonates for osteogenesis imperfecta is the inhibition of osteoclastic bone resorption leading to increased bone density and a potentially lower risk of fracture. This young man exhibited a good response to therapy with oral clodronate, suffering no adverse reactions. The increase in height of 18 cm over eight years, moving him from the 10th to 50th centile, suggests that his growth was not impaired by therapy.⁴ Many studies have shown that clodronate does not impair mineralisation. We are unable to determine the contribution of remodelling of vertebral fractures to his height gain.

A limitation of this report is that pubertal status was not documented at presentation. However, the increases in lumbar spine density are in excess of the expected average rates in growing children (3-6% per year and 14-16% during puberty).¹ The increase was also observed following adjustment for bone growth by BMAD and Z scores relating the measured BMD to age matched controls. The Z score (-5.22 to -3.92) improvement during therapy was not dissimilar to that reported with pamidronate¹ in younger children.

We agree that there is increasing evidence of a role for bisphosphonate therapy as part of the multidisciplinary management of osteogenesis imperfecta. Oral clodronate in our patient appeared to elicit a similar response to that of cyclical intravenous pamidronate, suggesting that orally administered bisphosphonates may be of value in the management of this disease.

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Serum prolactin in coeliac schoolchildren

Literature published suggests that in children with coeliac disease (CD) serum prolactin concentrations are increased, and correlate with the grade of mucosal atrophy. It has been proposed that prolactin is a possible marker of disease activity.¹ Other studies, however, have failed to show this correlation in children with CD.²

We studied prolactin levels in children with CD, and the correlation with the severity of intestinal mucosal atrophy.

We used samples from a serum bank obtained during a mass screening for CD in Sardinian schoolchildren, using both antiendomysial antibodies and antigliadin antibodies as screening tests, as previously described.³ The sample included 20 children with CD on a gluten containing diet (16 girls, 4 boys, mean age 12.9 years, range 11.5-14.4 years) and 40 sex and age matched normal children (32 girls, 8 boys, mean age 13.0 years, range 11.2-14.8 years). All subjects were euthyroid. Prolactin was assayed in duplicate using a commercial immunoradiometric method; results were analysed by analysis of covariance.

Data are expressed as mean (SE). Prolactin levels were 4.62 (2.1) ng/ml in patients with CD and 5.90 (2.6) ng/ml in controls (no statistically significant difference). No correlation was found between prolactin concentrations and the degree of intestinal damage (Marsh criteria).

Our study did not confirm the increased prolactin concentrations in children with CD reported by Reifen and colleagues.⁴ Our population differed somewhat in that there was a higher mean age (12.9 v 11.3 years), a narrower age range (11.5-14.4 v 5-18 years), and a different girl:boy ratio (4:1 v 1:1). Furthermore, our study included three potential coeliacs (subjects with antiendomysium antibodies positivity but normal intestinal biopsy⁴) and 11 asymptomatic coeliac children. The hypothesis that the normal prolactin values observed in our study may be due at least in part to the different clinical characteristics of the population studied is plausible, but its validation requires a specifically designed study.

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BOOK REVIEWS

A Clinical Guide to Inherited Metabolic Diseases, 2nd edn

Edited by JTR Clarke UK: Cambridge University Press, 2002, £29.95, pp 306. ISBN 0521890764

Dr Clarke's enthusiasm and erudition are evident on every page of this book, which is handily sized, and, wonder of wonders, costs only £30.

Most of the chapters are written with a clinically based approach, and the chapters on basic principles in understanding inherited metabolic disease, neonatal screening, hypoglycaemia, metabolic acidosis, storage diseases, and dysmorphism will be read with a sensation of increasing revelation by just about any paediatrician, and those with a secure background in biochemistry and metabolic disease will pick up many nuggets of wisdom.

Why then, do I simply not recommend every paediatrician who sometimes deals with metabolic problems—and there must be few of us who do not—to rush out and buy a copy before such a gem either goes out of print or rises in price? My caveat is that this book's clinical approach coupled with its encyclopaedic coverage of some topics means that several chapters leave the non-expert mentally breathless, and this effect is made worse by the absence of the structural formulae of the molecules named; this may be of little moment to those with these formulae at their fingertips, but that excludes rather a lot of us. By contrast the metabolic sections of "Nelson" and "Forfar and Arniel" clearly benefit from their inclusion.

So, for those on a unit dealing with many patients with inborn errors of metabolism, this book is invaluable, but general and

trainee paediatricians who think they can read this book from start to finish and become initiated into the mysteries of metabolic disease are likely to be overwhelmed.

If you can peruse this paperback at your local medical bookshop, do so; you may find it an answer to prayer, and anyway, at just under £30 it won't bankrupt anyone.

R A F Bell

Eating Problems in Children: Information for Parents.

Edited by C Fox, C Joughin. London: Gaskell, 2002, £10.00, pp 621. ISBN 1901242862

How commonly do we encounter the following scenario?

A desperately anxious mother at last convinces her GP that she needs to see a paediatrician because her normally growing toddler is eating nothing. The paediatrician wonders why his time is being wasted, and "reassures" the mother that there is nothing to worry about. Needless to say the anxiety persists with, no doubt, damaging consequences. As a profession, we handle these cases poorly. With 30% of preschool children suffering from mild to moderate eating problems, we need a better way to address these issues.

The Royal College of Psychiatrists has produced this small book for parents that should prove helpful, not only to parents but also to paediatricians and other health professionals. It provides information about the epidemiology of eating problems, and gives a useful classification, categorising eating difficulties into nine types, including persistence of eating inappropriate texture of food for age, food refusal, restrictive eating and selective eating. This allows the parent or professional to come to a more specific "diagnosis", and also a sense of the anticipated course these difficulties are likely to take. In particular, it provides clear pointers for those conditions that are indicative of significant emotional or psychiatric conditions.

Giving clear indications to the parent as to when to worry is helpful, as it is likely to encourage a sense of proportion to the anxiety accompanying the more common eating difficulties. The book goes on to provide specific and sensible advice about the practical management for each of the different types of eating difficulty.

At the end of the day, one is left with the finding that for most parents, not surprisingly, reassurance is what is required. I felt, however, that this book could help us proffer the advice in a more substantive form than we do at present, and can give us an approach that is likely to help diffuse the anxiety which contributes to the perpetuation of stressful mealtimes. I suspect the book will prove to be of most value to health visitors, but selected reading could be of use to the paediatrician too.

This book is therefore of value for a problem that presents so frequently to the general paediatrician, but I must admit to some reservations. It could have been better written, and in particular was rather unnecessarily repetitive. It certainly would have benefitted from paediatric review—I wondered who or what a community practitioner was, and gulped when I saw growth hormone mentioned in the section of treatment for restrictive eating! It was rather more concerning that children with disabilities got an occasional mention,



implying that they merited the same sort of approach. It surely would have been better to emphasise that they require a different sort of understanding and input. But, despite these concerns, the book should prove useful as it provides a systematic approach to the child with eating difficulties, and some clear, sensible practical advice to guide the parent in handling the problem.

M Rudolf

Childhood Headache

Edited by I Abu-Arafah. UK: Cambridge University Press, 2002, £45, pp184. ISBN 1 898 68326 3

Headaches in children are a common problem—70% of school children have headaches at least once a year, with 25% suffering from recurrent headaches. This book is part of the Clinics in Developmental Medicine series, and provides a comprehensive overview of the subject. The book is divided into clear chapters, which makes it easy to dip into. It includes interesting sections on pain perception in children and neonates, as well as a good epidemiology section. Throughout the book there are summary tables of recently published studies. In the later chapters there are case histories, including parental descriptions, which break up the occasionally slightly long winded text. There is an extensive list of references at the end of each chapter.

I found the chapters on migraine enlightening, especially the theories on pathophysiology of migraine. The diagnostic criteria for migraine are easy to read and clear. There is an excellent overview on the psychological treatment of headaches, regardless of diagnostic type. Again, the evidence is summarised in clear tables. There is a practical section on managing abdominal migraine. Causes of headaches are divided into separate chapters for specific and rare causes, which was helpful when I used the text when on call.

The final chapter talks about setting up a headache clinic, including a discussion on diagnostic tests. There is a headache questionnaire for parents, which I would find very helpful. There is also advice on the role of the multidisciplinary team in management.

This book would be a valuable addition to a general paediatric department, both in out-patients and for reference when on call.

A Morjaria

CORRECTIONS

In the article by Nixon *et al* (*Arch Dis Child* 2002;**87**:306-11), Dr Claire Wainwright should have been included as an author. Dr Wainwright's contribution was the establishment of the methodology and early patient recruitment and testing. Dr Wainwright moved from The Royal Children's Hospital at the end of 1997, and was funded by The Royal

Children's Hospital Foundation, Brisbane and the Cystic Fibrosis Research Inc, Queensland. The authors apologise for the omission.

The authors of the letter "Childhood SARS in Singapore" in the August issue (*Arch Dis Child* 2003;**88**:742) were written incorrectly. The authors names should be P Van Bever, C P P Hia, S C Quek.

In the acknowledgements for the leading article by Duke *et al* (*Arch Dis Child* 2003;**88**:563-5), Dr Diana Silimperi should have been acknowledged as part of the Paediatric Quality Care Group. The authors apologise for the error.

An error occurred in the paper by Riordan M, Rylance G, Berry K in the November issue.

(Poisoning in children 1: General management. *Arch Dis Child* 2002;**87**:393-6). In table 2, pupillary constriction associated with signs of increased sympathetic nervous system activity should read as mild pupillary dilation. Anticholinergic agents are likely to produce a more marked dilation. The authors apologise for the error.

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