Perinatal with allergy, immunity, and infection

G80 HUMAN MILK AND INFECTION IN PRETERM INFANTS: A SYSTEMATIC REVIEW

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Introduction: Among the many reasons used to advocate human milk feeding in preterm, low birthweight (LBW) infants is the surmise that human milk (HM) protects against infections. Clinical trials reporting an association between HM feeding and infection are few and the quality of existing research raises issues concerning interpretation of data from these trials.

Objective: To evaluate the available evidence on feeding HM *v* preterm formula on infection rates in preterm LBW infants.

Data Sources: Medline, Embase, Cinahl, Cochrane databases, previous reviews including cross references.

Selection Criteria: Any trials that investigated infection as an outcome of feeding HM *v* preterm formula in preterm infants <1500 g.

Results: Nine trials fulfilled the inclusion criteria. A total of 1136 infants (randomised controlled trials (RCT) n=362, cohort studies n=774) were studied. The number of exclusively HM fed infants were n=113 (31.2 %) and n=86 (11.1 %) in the RCTs and cohort studies, respectively. All nine trials reported significant reductions in infection rates in the HM groups compared with preterm formula. Methodological flaws relating to study design, sample size, varying definitions of HM feeding, and inadequate adjustment of covariates were present in all studies.

Conclusions: Despite the available data it is not possible to conclude that feeding HM protects preterm infants from infections. This review focuses on issues that affect the scientific validity and generalisability of the existing studies and the design of future studies that would circumvent the flaws found in current trials.

G81 PROPHYLACTIC INTRAVENOUS ANTIFUNGAL THERAPY FOR VLBW INFANTS: SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Invasive fungal infection is an increasingly common cause of mortality and morbidity in very low birth weight (VLBW) infants. As the diagnosis is often difficult, and treatment is often delayed, there is a need to assess whether antifungal prophylaxis is beneficial.

Aims: To assess the available evidence that prophylactic intravenous antifungal therapy prevents invasive fungal infection and reduces mortality and adverse neurodevelopmental outcomes in VLBW infants.

Methods: Cochrane systematic review and meta-analysis. We used the standard methods of the Cochrane Neonatal Review Group to identify and appraise randomised controlled trials that compared the effect of prophylactic intravenous antifungal therapy *v* placebo, or no drug, in VLBW infants. The primary outcomes were invasive fungal infection, death prior to hospital discharge, and longer term neuro-development.

Findings: We identified three trials enrolling a total of 214 infants.[1,3] All compared the effect of prophylactic intravenous fluconazole *v* placebo. In meta-analyses, fluconazole prophylaxis was associated with a significantly reduced risk of invasive fungal infection (RR 0.20 (95% CI 0.07 to 0.64); NNT 8 (5 to 20)) and death (RR 0.44 (0.21 to 0.91); NNT 9 (5 to 50)). None of the trials reported longer term neurodevelopmental outcomes.

Conclusions: This systematic review suggests that there will be one fewer death in every nine infants treated with prophylactic fluconazole, but the 95% CI around this estimate of effect is wide. Further large randomised controlled trials are needed to give a more precise estimate of effect, and to assess the long term neurodevelopmental consequences of this intervention. There is also a need for further data on the effect on the emergence of antifungal resistance.

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G82 HEPATITIS B ANTENATAL SCREENING AND INFANT IMMUNISATION PROGRAMME—A REVIEW OF THE CURRENT PROBLEMS FACED

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Background: Babies born to chronic hepatitis B carriers have a 25% risk of perinatal infection. Of those infants infected at birth, 90% will become chronic carriers, compared with 5–10% of individuals infected as adults. Universal antenatal screening for hepatitis B with subsequent neonatal hepatitis B virus (HBV) vaccination of at risk infants reduces the risk of chronic carriage by up to 90%, thus rendering this measure highly effective. In July 1998 the Department of Health (DoH) recommended that all pregnant women be offered antenatal screening for hepatitis B and that all health authorities make arrangements for such a screening programme and for appropriate immunisation and follow up of babies born to infected mothers.

Objectives: The correlation of HBV viral load and hepatitis B serological status was analysed on antenatal sera samples, to determine the reliability of serological status in assessing infectivity. In addition, characterisation of adherence with the 1998 DoH recommendations for hepatitis B antenatal screening and infant immunisation was viewed in an area of west London. Any existing problems with this programme were identified and missed opportunities for prevention of HBV perinatal infection reviewed.

Methods: All HBsAg positive antenatal women were included over a 2 year period. Demographic and HBV vaccination information was abstracted from antenatal, labour, and neonatal notes. Information on HBV vaccine course completion in the community was obtained. Any racial disparity in vaccine uptake was viewed. Serum quantification of hepatitis B viral DNA was performed on HBV infected antenatal patients. The viral loads obtained were matched with patient serological status, allowing review of serological status as a marker for infectivity in the antenatal setting.

Results: In our antenatal cohort the serological absence of HBeAg did not exclude viral replication. Of our samples, 31% of HBeAg negative samples had detectable HBV DNA, and 24% had HBV DNA of $>10^4$ copies/ml. For HBV vaccination, the numbers with no vaccine record rose steeply over the scheduled course and only 6% were known to have received the fourth dose of vaccine. Problems were assessed.

Conclusion: Serological absence of maternal HBeAg does exclude viral replication. Adherence to DoH recommendations for HBV perinatal disease prevention could be improved, reducing chronic hepatitis B carriage in newborns. Follow up serology could not be found on the majority of babies. Thus, the long term morbidity and economic burden secondary to missed opportunities for hepatitis B prevention is difficult to fully assess.

G83 IMPACT OF A MULTIFACTORIAL PREVENTION STRATEGY ON NOSOCOMIAL INFECTION IN A TERTIARY NEWBORN NEONATAL NURSERY

Aims: To reduce the rate and impact of nosocomial infection.

Methods: Infants requiring an intravascular device between Feb 02 and Feb 03 were included. The first 6 month interval (control) included surveillance of current practice. Staff participated in an education and hand washing session. The intervention began in the 7th month and included (a) changes to hand washing solutions, (b) standardisation of

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Demo characteristics	Interval Control	Treatment	Outcomes	Interval Control	Treatment
Infants (n)	322	354	Devices (n)	1318	1400
A: weeks	33.4	34.2	Total device time (h)		
Mean (SD)	(4.8)	(4.6)		64058	75245
weight: gms	2155	2324	Blood culture positive (n)		
Mean (SD)	(1019)	(995)		22	9
Weight <1.5 kg	100	85	Rate of infection per 10 000 h	3.4	1.2
Number (%)	(31%)	(24%)			

device insertion with specialised packs, (c) changes to skin antiseptic solutions (2% aqueous chlorhexidine and/or 1% chlorhexidine in ethanol), and (d) mandatory removal/replacement of all intravascular devices after 48 h with removal of all devices once enteral feeds were >120 mls/kg/day.

Measurements: Demographic data and details of all intravascular devices were collected. Blood stream infections were recorded. The rate of device related infection was calculated. Length of stay (LOS) and death were recorded.

Results: 676 newborns required 2719 devices. There was a significant reduction in device related infection (3.4 *v* 1.2 per 10000 device hours, p 0.006). There was weak evidence of reductions in median LOS (10 to 8 days, p 0.02) and mortality (7% to 5%, p 0.14). Four infants had complications from 2% aqueous chlorhexidine.

Conclusion: Implementation of a prevention strategy resulted in a reduction in device related infections. Modification of antiseptic solutions is needed to reduce complications from 2% aqueous chlorhexidine.

G84 ASSOCIATION BETWEEN CYTOKINES AND HAEMODYNAMICS IN LOW BIRTHWEIGHT INFANTS

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Introduction: Chorioamnionitis has been associated with white matter brain injury. The exact mechanism has not been clearly determined. Furthermore, the watershed distribution of white matter injury suggests that ischaemia may play a role. We hypothesised that elevated cytokine levels associated with chorioamnionitis may have an effect on the smooth muscle of the heart and vasculature. This study aimed to determine if elevated levels of cytokines were associated with decreased cardiac output and low blood pressure.

Methods: 21 infants with median gestational age of 27 weeks (range 23–30) and median birthweight of 935 g (470–1522) were studied during the first day after birth. Interleukin 10 (IL 10), IL 6, IL 1β, and Tumour Necrosis Factor α (TNF α) were measured in bronchoalveolar lavage samples using two techniques (bead array technology and standard ELISA). Left and right ventricular cardiac outputs were measured using echocardiography. Mean blood pressure was recorded using arterial catheters. Cerebral fractional oxygen extraction was measured in eight infants. Mann-Whitney tests were used to analyse differences.

Results: All data are given as (median, range). Nine infants with left ventricular output less than 150 ml/kg/min had significantly higher levels of IL 10 (209 pg/ml, 0–1113) than 13 infants with left ventricular output higher than 150 ml/kg/min (60 pg/ml, 0–629) (p 0.015). Five infants with right ventricular output less than 150 mls/kg/min had significantly higher levels of IL 10 (552 pg/ml, 110–1113) than 16 infants with right ventricular output higher than 150 ml/kg/min (44 pg/ml, 0–254) (p 0.004). Five infants with mean blood pressure less than 30 mm Hg had higher levels of IL 1β (p 0.008), TNF α (p 0.036), and IL 10 (p 0.055) than 16 infants with mean blood pressure more than 30 mm Hg. Cubic regression showed that cerebral fractional oxygen extraction increased at higher levels of IL 10 (Rsq 0.86; p 0.008).

Conclusion: High levels of cytokines are associated with low cardiac output and hypotension. Cytokines may have a depressant effect on cardiac function and vascular tone, which may decrease cerebral perfusion.

G85 THE ROLE OF HYPOXIA AND ENDOTOXIN IN A PIGLET MODEL OF ADVANCED NECROTISING ENTEROCOLITIS (NEC)

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Background: Hypoxia and bacterial colonisation are major risk factors for NEC.

Aim: To investigate the role of hypoxia and endotoxin (lipopolysaccharide, LPS), both singly and in combination, on the degree of intestinal damage in a neonatal piglet model of NEC.

Methods: 29 anaesthetised piglets, median age 2 days and weight 1861 g, were studied. Animals formed five groups: controls (n = 9); hypoxia (H) (n = 5); high dose LPS group (n = 5); H+low dose LPS (n = 5); and H+high dose LPS (n = 5). Heart rate, mean arterial blood pressure (MBP), and arterial acid base status were recorded. After 6 h the internal organs were removed for examination.

Results: All physiological parameters were stable in controls. In the H, LPS, and H+low LPS groups the pH remained stable throughout. However, the H+high LPS group became significantly more acidaemic (mean pH fell from 7.43 to 7.10; p<0.001). In the H group MBP remained stable throughout. However, in the three groups receiving LPS there was a fall in MBP. Degree of fall was significantly greater in the H+high LPS group (95 to 48 mm Hg, p 0.009). Pathological examination of the intestines from all controls was normal. In the H group and LPS group all intestines showed congestion and patchy mild neutrophil infiltration only. In one animal in the H group there was a small petechial mucosal haemorrhage in the caecum. Pathological examination of the H+low LPS group showed patchy intraluminal and mucosal intestinal haemorrhage in 2/5 and mucosal ulceration in 3/5. In the H+high LPS group there was epithelial apoptosis with inflammation in 1/5; villous irregularity and mucosal haemorrhage in 1/5, and mucosal ulceration and transmural haemorrhagic necrosis of the ileum and caecum in 3/5. Pneumatosis intestinalis was present in 4/10 of the combined insult groups. In all these cases the histological features were indistinguishable from those of human NEC.

Conclusion: These results indicate that hypoxia and endotoxin act synergistically to produce the intestinal lesions in our model for NEC. This may have important implications for the development of NEC in human infants.

PostScript

LETTERS

Accuracy of clinical diagnosis in Down's syndrome

Hindley and Medakkar[1] showed that the clinical diagnosis of Down's syndrome is inaccurate in one third of cases. We can imagine how stressful it will be for the parents if they have been told that their child may have Down's syndrome and then subsequently karyotype proves to be normal. We conducted a retrospective study to estimate the accuracy of clinically suspicion in our region and in our hospital in particular.

Using the regional cytogenetic laboratory database, all clinically suspected cases of Down's syndrome born in the West Midland region during the period June 2000 to December 2002 were identified and karyotype results analysed. All babies identified from Birmingham Women's Hospital were studied in detail by reviewing the case notes. Of 233 suspected cases from the whole West Midland region, 148 cases were positive by karyotype. Hence the accuracy of clinical suspicion was 64%. These figures were similar to results from Hindley and Medakkar,[1] which showed this was 68% nationally and 64% in the Manchester region. However, from Birmingham Women's Hospital, of 29 cases identified, 25 had a karyotype of trisomy 21 and so a higher accuracy rate of 86%.

We cross checked the patient data from Birmingham Women's Hospital with the rest of the region and found that there were no missed cases from our hospital. Based on the information given to parents before doing the karyotype, in 22 babies where parents were told the diagnosis of Down's syndrome was felt to be certain, karyotype was positive in all 22. However, in seven cases where they were told a positive diagnosis was possible, four had a normal karyotype. All 25 cases that were confirmed positive were seen by a consultant before testing. In 23 of 25 babies, clinical suspicion occurred within the first 2 days of life; in two of the babies who were preterm, it took at least 3–4 weeks for clinical suspicion to develop. When we analysed the four negative cases, two were tested without being assessed by a consultant. One case was tested just based on profound hypotonia at 31 weeks but no other classical clinical features. In the final case, karyotyping was done to reassure the parents because there was repeated suspicion by two independent midwives and a registrar, but the consultant felt the baby was normal.

Our data from Birmingham Women's Hospital showed a favourable accuracy rate compared with the previous study.[1] This can be explained by the fact that the tertiary hospital may have more experienced neonatalogists compared to the broad cohort of junior and senior paediatricians involved in other parts of the region. We believe that assessment by a senior paediatrician before testing may minimise the risk of negative results. There may be difficulty in diagnosing Down's syndrome in preterm babies who may take some time to manifest classical features. We also agree with Hindley and Medakkar[1] that some sort of scoring system like Fried's index[2] may also be useful in improving the accuracy of clinical diagnosis. However, a large prospective study is needed to evaluate those scoring systems.

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Beware CSF pressure measured under general anaesthesia

Wraige *et al* describe three children suffering from idiopathic intracranial hypertension (IIH) in the absence of papilloedema.[1] MRI findings in two cases along with an initial symptomatic improvement following lumbar puncture support the diagnosis. In the third case MRI scan was normal and the child's headaches did not respond to lumbar puncture or acetazolamide. In all three cases CSF pressure was measured under general anaesthesia with control of position and of carbon dioxide concentration, presumably by end-tidal CO_2 monitoring. The anaesthetic technique is not reported.

The message that children with IIH may not have papilloedema is a valuable one. However, we would like to add a note of caution regarding the measurement of CSF pressure under general anaesthesia. We have found unexpectedly raised CSF pressure when performing lumbar punctures under sevoflurane anaesthesia, administered to facilitate MRI scanning, in children with a variety of neurological disorders.

All inhalational anaesthetic agents have a cerebral vasodilating action and will increase cerebral blood volume and hence intracranial pressure (ICP). In addition the spontaneously breathing child will sustain an appreciable rise in ICP from the respiratory depressant action of these drugs and consequent hypercarbia. This increase can be prevented by controlled ventilation. Volatile agents may also reduce cerebral perfusion pressure by their hypotensive effect which is due to a combination of systemic vasodilatation and direct myocardial depression; in higher doses cerebral autoregulation may be abolished altogether.[2 3]

Obstruction to venous return also increases ICP. The flexed position of the anaesthetised child during lumbar puncture may be more marked than when performed without anaesthesia. Coughing and straining at induction of anaesthesia and obstruction to respiration from bronchospasm or the introduction of positive end expiratory pressure (PEEP) will all cause a rise in ICP which may remain a factor at the time of lumbar puncture. Finally, end-tidal CO_2 is always lower than arterial CO_2 and it is not always possible or desirable to check a blood gas prior to lumbar puncture.

It seems likely that the use of general anaesthesia to facilitate lumbar puncture will increase as deep sedation on paediatric wards becomes less acceptable and increasingly deskilled paediatricians perform fewer lumbar punctures. We are concerned that children having lumbar puncture under general anaesthesia could be erroneously diagnosed as having intracranial hypertension. Until a standard anaesthetic technique is developed which can be shown to have a minimal effect on intracranial pressure, we believe that measurements of CSF opening pressure under general anaesthesia should be interpreted with caution. If doubt exists, and certainly if surgical treatment is contemplated, insertion of an intracerebral transducer allows definitive measurement of ICP over a period of hours or days.

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Cat scratch disease presenting as meningomyeloradiculopathy

We report meningomyeloradiculitis as a presenting picture in a child with cat scratch disease (CSD) and identify the need to include this infection in the differential diagnosis of meningomyeloradiculopathies. We also show the likely benefit of antibiotherapy.

Case report

An 11 year old girl presented three months prior to hospitalisation with low back pain radiating to the lower limbs with paresthesia, limping, and a progressively decreasing strength in the right lower limb. She had sphincter disturbances with frequency of micturition and dysuria. A month later, she developed a stiff spine with impairment in daily activities. Initial examination (day 0; D0) showed decreased strength in the right lower limb with thigh atrophy and reduced sensations. There was scoliosis (dextroconvexity). MRI (fig 1) revealed enlarged conus medullaris, with hyperintensity on T2. Cerebrospinal fluid (CSF; sub-occipital puncture) showed lymphocytic meningitis.

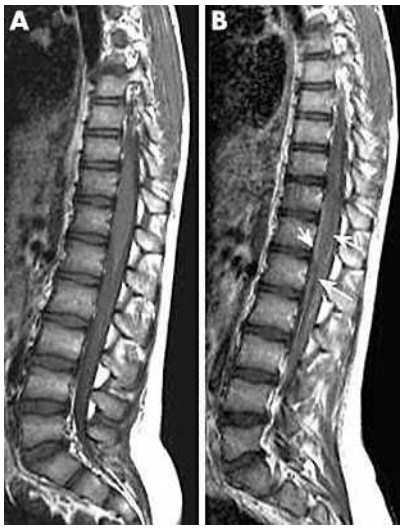

Figure 1 Sagittal MRI of the spine. T1 weighted images: (A) without, and (B) with contrast, showing meningeal enhancement of the roots and the conus medullaris.

Serologic immunofluorescence revealed a *Bartonella henselae* (BH) IgG titre of 1/1024; IgM was 1/128. Interrogation revealed cat exposure. Ofloxacin 30 mg/kg/day and rifampicin 20 mg/kg/day were given for six weeks. Recovery in general state and usual activities started a few days after treatment initiation. Improvement of scoliosis followed. All motor, sphincter, and sensory disturbances gradually recovered over one month.

On D60, full spine *x* ray, T1 and T2 weighted spinal cord MRI, and CSF normalised. BH serology showed a negative IgM, and IgG was at 1/512. At the last assessment (D90), clinical examination was normal.

Comment

CSD is a self limited infection. Neurological involvement is rare; full recovery in these cases has been reported but may take several months. In these neurological forms, antibiotics were suggested to accelerate resolution. In our patient, combined antibiotic therapy resulted in dramatic improvement, supporting such a therapeutic approach.

The spectrum of infiltrative or space occupying lesions of the central nervous system (CNS) is wide and includes infectious/parasitic conditions (such as mycobacterial infection, angiostrongylosis, and schistosomiasis), inflammatory, vascular, and metabolic diseases (''pseudotumoral'' acute disseminated encephalomyelitis, sarcoidosis, Langerhans histiocytosis, GM2 gangliosidosis, and venous infarcts).[1–4] CSD related CNS infective/inflammatory conditions have therefore to be added to this spectrum of infiltrative pathologies and should be carefully excluded before resorting to an invasive technique such as CNS biopsy.

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Intra-renal reflux

Intra-renal reflux may accompany high-grade vesico-ureteral reflux (VUR) and represents the severe end of the VUR spectrum. In addition, intra-renal reflux is usually seen in very young patients. Presence of intra-renal reflux is a high risk factor for renal scarring, which is an important cause of chronic renal failure and arterial hypertension in children.[1] When Angulo *et al* investigated VUR, they documented intra-renal reflux in 17/89 kidney units in 61 patients with VUR.[2]

Voiding cysto-urethrography remains the gold standard for the diagnosis of VUR[3] and is one of the best modalities to demonstrate intra-renal reflux, if present. This is often seen as a wedge or fan shaped flush of contrast starting from the calyces outlining the renal papillae, and may extend to the surface of the kidney (see fig 1).

Early recognition of VUR and prompt management favourably influences the prognosis[4 5] and hence all children at risk should be screened.[6] In particular, children with intra-renal reflux should be considered for early intervention to stop reflux (either by endoscopic correction or ureteric implantation) and have regular follow up to monitor renal growth and renal function.

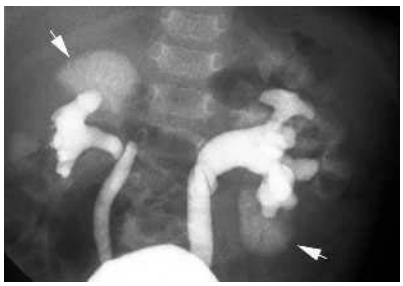

Figure 1 Arrows show the presence of intra-renal reflux.

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Only wholeness leads to clarity

Authors Lee and Mann argue for law compelling use of cycle helmets by children to prevent road deaths and serious injuries.[1] This observer is surprised that the peer reviewers allowed publication of material lacking evidence either that the actual risks faced by child cyclists justify compulsion, or that the real world results of helmet compulsion in other countries justify compulsion in this country. These shortcomings are typical of papers in the medical literature that attempt to address the issue of cyclist safety. I believe that these chronic shortcomings are primarily the consequence of the failure of the peer review process.

In the first place, it is irrational that consideration of helmet laws for children is restricted only to cycling, or even begins with cycling. Although, tragically, around 30 child cyclists have been killed on public roads annually in recent years, typically 110 child pedestrians are killed annually.[2] Estimates of death risk per kilometre travelled derived from standard data sources[3] do not suggest that child cyclists face greater risks than child pedestrians in most age groups. It is in any case evident that the average child is almost four times more likely to become a serious casualty while walking rather than cycling. The peer reviewers ought to have insisted on a more general discussion of the risks faced by children in transport. This would have placed the injuries to cyclists in context and enabled priority, surely the basis of any systematic approach to public health interventions.

In the second place the evidence for the effectiveness of cycle helmets is split by an interesting contradiction. The authors cite research based on case-control trials reporting that helmeted cyclists were much less prone to serious head injuries than the bareheaded, at least at the time and in the locality of the research work. However, there is also a substantial body of evidence based on population-level studies of head injuries with increasing helmet use. These studies consistently fail to show material benefit for cyclist populations that took up helmet wearing. This was even true in New Zealand, where cyclists responded willingly to helmet promotion, with voluntary use reaching 60% even before the well obeyed law of January 1994 came into force.[4] The famous helmet laws for the states of

Australia brought into effect during 1990–94 drew a similar null result on close analysis.[5] In the United States, population-level data gathered by the Consumer Product Safety Commission (a US government organisation that strongly promotes helmet use) shows that the risk of head injury per US cyclist increased by 40% during the 1990s, while helmet use increased from under 20% to at least 50% of cyclists.[6] The omission of such evidence places a serious question mark against the competence of the peer reviewers in this case.

The hiatus between clinical trials and population-level results is of scientific interest and draws the curiosity of inquiring minds. Ignoring the hiatus smothers the existence of a mystery. This is unscientific.

It must be added by-the-by that studies of reported casualties in Britain have revealed a disturbing tendency towards increasing severity of injury with increasing helmet use. This has been observed at the national level[7] and for London,[8] where helmet use grew much earlier than the national average. Edinburgh has been identified as having the highest level of helmet use in the country. An ongoing analysis of reported casualties by the author has revealed increasingly severe injuries after 1995, especially for child cyclists. These increases cannot be accounted for by worsening road conditions, since this would have been revealed in pedestrian injury trends. It is not absolutely clear whether the effect is coincidence or consequence, but fair peer review ought to have insisted on some commentary on whether helmet use has influenced reported road casualties. The objective is, after all, to reduce deaths and serious injuries in road crashes.

That helmet use has failed to improve reported road casualties is not surprising. A cycle helmet is designed to meet the event of a simple fall at speeds below 12 mph. Such a mild crash is unlikely to incur serious injury when road riding. Safety campaigners are pressing helmets to an application for which they were not intended. The ethics of this are questionable, a point peer reviewers should have highlighted. The use of helmets is more relevant off-road or ''at play'', stunt riding on BMX or MTB type machines. The use of helmets in such situations is perhaps to be encouraged, although parental supervision should come first. On the other hand, these comparatively high risk activities are the consequence of children being denied the freedom to cycle for transport. Riding sensible road bikes on public streets either is, or ought to be, a safe mode of travel for children, not rationally to be distinguished from walking.

In summary, the peer review process has failed to stop incomplete evidence being presented as reliable knowledge. The readership may in consequence be led into two levels of misconception:

- The factoid that child cyclists are more at risk from motor traffic than child pedestrians
- The factoid that cycle helmets can protect children in road traffic accidents. A famous line from Schiller comes to mind as apt to the occasion:

> Nur die Fuelle fuehrt zur Klarheit.
> [Only wholeness leads to clarity]

Let us hope, for the sake of the public understanding of cycling, that in future peer reviewers apply this wisdom. There will be resurgence of children walking and cycling only when the perceived danger from motor traffic in urban areas is addressed. Proposing compulsory use of inappropriate safety equipment evades this simple truth. Public health interventions must focus on the source of the perceived danger, not burden the innocent with the consequences of adult licentiousness.

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BOOK REVIEW

Pediatric gastroenterology and clinical nutrition

Donald Bentley, Carlos Lifschitz, Margaret Lawson. London: Remedica Publishing, 2002, $90.00, pp 495. ISBN 1 901346 43 9

This book, although a paperback, is quite substantial, weighing in at 1.25 kg on my kitchen scales. Its 563 pages include only 315 pages of text and references, the rest being devoted to extensive appendices on normal values and recommended dietary intakes for just about everything, and also the contents of many therapeutic foodstuffs. Furthermore the font size in the text and index (12 lines per 2 inches, compared to 15 in ''Nelson'') is rather larger than that usually found in medical texts.

This book covers the major aspects of gastroenterology and includes sections on pancreatic and liver disease; there are also valuable sections on eating disorders and food aversion.

This book is just the job wanting to go a bit beyond the standard texts, such as ''Nelson and ''Forfar and Arneil'' and its fairly large print makes it easy to read for those, such as MRCPCH candidates, reading chapter by chapter, and those of bifocal age, whereas the rather poor index, for which the large font is a disadvantage, does not help its use as a quick reference; there was no mention, for example, of probiotics in the index, yet *Lactobacillus rhamnosus* GG and *Lactobacillus lactis* are mentioned in the treatment of acute diarrhoea and inflammatory bowel disease respectively.

The enormous amount of space (179 pages) devoted to appendices rather unbalances the book for the cursive reader, although the information contained therein could be a godsend for someone needing to prescribe special dietary supplements, or to understand a dietician's advice, such as a paediatrician with significant numbers of children with gastroenterological disorders.

The discrepancy between its excellent crisp chapters of text and the bulky reference section makes me wonder just at whom this book is targeted; perhaps a clue to this dichotomy is to be found in the page of acknowledgements, where Dr Lifschitz states: ''This work is a publication of the US Agriculture, Agricultural Research Service (USDA/ARS) and the Children's Nutrition Research Centre … It has been funded by the USDA/ARS under cooperative agreement NO. 6250–51000.'' That may explain why, despite two of the three authors being from London, the text is in American English: this really isn't a problem since the differences between diarrhoea and *diarrhea* and coeliac and *celiac* are slight.

If the appendices and an improved index could be printed in smaller text, this would be an even better, yet less bulky, book.

R A F Bell

CORRECTIONS

Archivist: John Snow's theory of rickets (*Arch Dis Child* 2004;**89**:147). In this article the composition of alum is incorrectly given as potassium aluminium phosphate. Alum actually contains sulphate, not phosphate. The error is much regretted.

In the *Arch Dis Child* supplement I of this year (published in April) the author details of abstract G83 (pA32) were not published. They are as follows: J. Hart, C. Harrison, C. Andersen, for The Mercy Neonatal Nosocomial Infection Working Group. *Department of Paediatrics, Mercy Hospital for Women, East Melbourne, Victoria*.