PostScript

LETTERS

Hospital admissions for bronchiolitis in preterm infants in the absence of respiratory syncytial virus prophylaxis

Respiratory syncytial virus (RSV) is the causative agent in more than 50% of cases of bronchiolitis, with mycoplasma pneumonia, Para influenza 3, adenovirus, and some other viruses accounting for most of the remaining cases. Mortality from bronchiolitis ranges from 1% to 3%. Although as yet there is no safe and effective vaccine, passive immunity with Palivizumab has been shown to reduce hospital admissions of preterm babies, but no reduction in mortality, intensive care admissions, or ventilation days was observed.[1] Critical appraisal of this study reveals that the number of infants to be treated to prevent one hospital admission is between 17 and 22.

The objectives of our study were to document local admission rates of premature infants from clinical bronchiolitis, assess local mortality and morbidity secondary to bronchiolitis, and examine seasonal and annual variation of bronchiolitis admissions. By examining hospital admission databases in Cork University Hospital, all admissions between 1997 and 2001 for clinical bronchiolitis, including intensive care admissions, were identified. Parents of premature infants (32 weeks) born in the Maternity Services in Cork in 1997–2001 were contacted by telephone and postal questionnaire, with a response rate 82%.

Thirty five of 174 babies (20%) were admitted for bronchiolitis over this five year period. Total hospital inpatient stay was 175 days. Average length of stay was five days per infant. Peak incidence of bronchiolitis in our region was between November and March. Whereas the number of preterm infants < 32 weeks born in our region increased over the years, the percentage admitted with bronchiolitis decreased (fig 1). None of the preterm infants admitted with bronchiolitis required admission to the intensive care unit. Indeed only five infants, all born at term gestation without underlying conditions, required intensive care admission and ventilation for clinical bronchiolitis during this time. There were no deaths from bronchiolitis in either premature or term infants.

Palivizumab cost €940 and €564 per 100 and 50 mg vial respectively. At a dose of 15 mg per kg, with five doses per season (as recommended by the American Academy of Paediatrics), provision of prophylaxis to all our premature babies (32 weeks) would cost > €400 000 compared with inpatient hospital cost for premature infants with bronchiolitis approximating < €50 000.

Bronchiolitis due to RSV and other viruses is still a major problem in preterm infants. The role of parental education (RSV: Reduce exposure, no Smoking, Very good hand washing) has not been evaluated. We believe that, given the absence of a reduction in mortality and significant morbidity (ventilation, admissions to intensive care), the role of Palivizumab for RSV prophylaxis for premature infants remains questionable, with the potential long term benefit of RSV prophylaxis as yet undetermined.

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Reference

1 **The Impact Study Group**. Palivizumab, a humanized respiratory syncytial virus monoclonal antibody, reduces hospitalisation from respiratory syncytial virus infection in high infants. *Pediatrics* 1998;**102**:531–7.

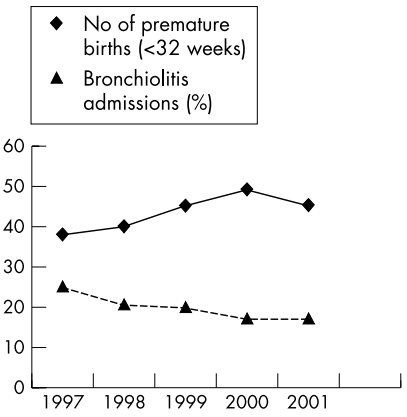

Figure 1 Premature births (< 32 weeks) and bronchiolitis admission rates over five years.

Current use of nasal continuous positive airways pressure in neonates

Neonatal applications of nasal continuous positive airways pressure (NCPAP) include prevention of extubation failure,[1] apnoea of prematurity,[2] and as an alternative to intubation and ventilation in respiratory distress syndrome,[3] in very preterm infants,[4] and in exacerbations of chronic lung disease. On our neonatal unit we deliver all CPAP using the Infant Flow Driver (IFD) (EME Ltd, Brighton, UK). We were interested in how other units currently use the IFD and wean infants from NCPAP.

Between December 2003 and April 2004 we surveyed all 58 neonatal units with intensive care cots in the Northern Region of England. We posted a questionnaire and stamped addressed envelope to the unit nurse manager. We made a follow up telephone call to all units that did not respond and for incomplete or ambiguous replies. We obtained a 100% response rate. Table 1 summarises the main indications for NCPAP and weaning practices in 54 units that used the IFD.

Other indications cited were: chronic lung disease (five units); thoracic dystrophy (one unit); post-diaphragmatic hernia repair (one unit). Three units gave CPAP only through an endotracheal tube, and one surgical unit did not use CPAP in any form.

We found that briefly intubating, giving surfactant, then starting NCPAP is common in infants with severe respiratory distress syndrome and in very preterm infants. This is despite scant evidence to date that the practice decreases chronic lung disease or need for mechanical ventilation.[5]

The optimal method of weaning infants from NCPAP remains unanswered.[5] We found that although some units try abrupt discontinuation of NCPAP, most wean on an ad hoc basis by gradually decreasing either time spent on the IFD or the CPAP pressure. Only three units (6%) had a weaning protocol, although most respondents (85%) would welcome formal weaning guidelines.

Table 1 Use of Infant Flow Driver nasal continuous positive airways pressure (NCPAP) in the Northern Region of England

Indications	Routinely	Rarely	Never
Initial management of RDS	41 (76)	13 (24)	0 (0)
Severe RDS/very preterm in conjunction with surfactant	25 (46)	21 (39)	8 (15)
Apnoeas	24 (45)	25 (46)	5 (9)
After extubation	50 (93)	3 (5)	1 (2)

NCPAP weaning			
Method		*Who decides when to wean?*	
Time off	36 (66)	Doctors	10 (18)
Pressure	2 (4)	Nurses	1 (2)
No set method	16 (30)	Joint decision	43 (80)

Values are number (%) of units.
RDS, Respiratory distress syndrome.