Examining the Prevalence of Parental Smoking in Children < 5yr Admitted with Respiratory Illnesses

Sir

There is clear evidence that exposure to environmental tobacco smoke in early life is associated with an increased incidence of lower respiratory tract infections, including wheezing illnesses. The prevalence of cigarette smoking in Ireland was 24% in December 2007. This has decreased since introduction of the smoking ban in 2004, prevalence then being 31%. However a significant number of Irish children are still regularly exposed to cigarette smoke. We wished to examine parental smoking in preschool children admitted with respiratory illness. We hypothesised that (a) more children of parents who smoke would require admission, (b) the hand held CO monitor (PICOplus smokelyzer (Bedfont Scientific)) may be a means of assessing parental smoking behaviour and (c) the CO monitor may be a helpful tool to aid with parental education about the dangers of smoking.

The parents of children aged five or less requiring admission to Cork University Hospital with an acute respiratory illness during October to December 2007 were recruited. Information collected included the child’s age and sex, diagnosis, severity of illness, gestation, birth weight, presence or absence of increased risk factors and family history of asthma or atopy. Parents were asked if they smoked. Parents had their exhaled carbon monoxide levels measured using the PICOplus smokelyzer (Bedfont Scientific). This involved exhaling into a small hand held monitor for ten seconds. A CO level of ≥7ppm considered as evidence of smoking.

Eighty parents (60 mothers, 20 fathers) of 60 children were recruited. No parents refused to participate. Diagnoses included asthma, bronchialitis, croup, lower respiratory tract infection, upper respiratory tract infection and viral induced wheeze. Viral induced wheeze was four times as diagnosed in children exposed to smoke. Age, sex, gestational age, presence or absence of risk factors and disease severity were similar in both groups. Birth weights of children exposed to environmental smoke was lower. Thirty two parents (22 (37%) of mothers and 10 (50%) of fathers) volunteered as being regular smokers. National prevalence of smoking among women in 2007 was 23.2% and in men was 24.6%. In this study the prevalence in females was 37% and in males - 1.6 and 2.0 times the national value. Of note most parents reported that they smoked outdoors only. Thirteen women said they smoked during pregnancy, but nine (41% of female smokers) said they abstained until the baby was born.

This is the first study looking at exhaled CO measurement in parents of children admitted to hospital. The use of this hand held monitor as a detector of smoking was found to be easy to use and readily accepted by the parents. Using 7ppm as a positive result yielded a 77% sensitivity and 94% specificity when compared with history. In conclusion this study demonstrated that the prevalence of smoking among parents of preschool children admitted to hospital with a respiratory illness was much higher than the general population. There is ongoing need for parental education about the dangers of environmental smoke exposure especially in preschool children.

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References