

The burden of acute nasopharyngitis among adolescents

Data on the burden of physical illness specifically among adolescents are scarce. Major new insights about the ways in which adolescents differ from both children and adults have emerged from a diverse range of research.¹ Upper respiratory infections are the most common cause of visits to paediatric clinics among children and acute nasopharyngitis is the most frequent upper respiratory infection.²

To estimate the burden of acute nasopharyngitis among adolescents, a cross-sectional prospective population-based investigation was conducted in Salvador, northeast Brazil, from November 2002 to July 2003. Adolescents (aged 10–19 years) were randomly recruited at school. Data were collected by interview using a standard questionnaire after written informed consent had been given by the director of each school and the study participant. This study was approved by the ethical committee of the School Hospital (Federal University of Bahia, Bahia, Brazil).

Of the 1013 recruited adolescents, 266 (26.3%) reported current acute nasopharyngitis at the time of recruitment; 837 (82.9%) reported acute nasopharyngitis in the past year (annual mean (standard deviation) number of episodes 1.53 (0.81); min/max number of episodes = 1.0/6.0) and 30% reported at least two episodes. Active smoking was reported by 1.3% (13/1013). Table 1 presents the factors associated with acute nasopharyngitis.

The data mentioned in table 1 suggest that acute nasopharyngitis is a frequent illness among adolescents. It is important to emphasise that one quarter of the study participants reported current acute nasopharyngitis during the interview (point prevalence 26.3%). Although this information should have been confirmed by physical examination, reporting of current signs and symptoms of acute nasopharyngitis is a useful tool for diagnosis.² The estimation of occurrence of acute nasopharyngitis in the past year might have been underestimated by recall bias. The association of acute nasopharyngitis in adolescents with the same illness in household contacts suggests that several of those episodes are due to contagious infection. Aymard *et al*² have reported that the annual prevalence of symptomatic acute respiratory infections was 27–28% in a prospective community survey of 0–15-year olds, and among patients aged 10–15 years influenza infection was detected in 30%. Acute nasopharyngitis may influence performance and productivity at school and work, in addition to the occurrence of complications. The low frequency of active smoking is noteworthy. The prevalence of active smoking reported herein is probably underestimated. Nonetheless, passive smoking has been recognised as a widespread, important and avoidable risk factor for respiratory symptoms in both children and adults, and reducing passive smoking in the community may have a large positive effect on respiratory health.³ The results presented in table 1 emphasise the importance of passive smoking for physical health among adolescents. It is possible that several of the reported episodes were allergic rhinitis, as the clinical symptoms of acute nasopharyngitis and allergic rhinitis overlap. In a population-based survey, 32% of the studied adolescents

Table 1 Potential factors associated with acute nasopharyngitis among 1013 Brazilian adolescents

| Variables | AN | | OR* (95% CI) |
|-----------------------------|-----|-----|---------------------|
| | Yes | No | |
| AN contact in household | | | |
| No | 179 | 635 | 1.0 |
| Yes | 87 | 111 | 2.75 (1.97 to 3.82) |
| Passive smoking (cigarette) | | | |
| No | 159 | 507 | 1.0 |
| Yes | 107 | 239 | 3.18 (1.61 to 6.29) |
| Asthma | | | |
| No | 247 | 727 | 1.0 |
| Yes | 19 | 18 | 1.39 (1.03 to 1.88) |

AN, acute nasopharyngitis.

*OR from multivariable logistic regression—age and sex included into the final model.

reported symptoms of rhinitis in the past 12 months.⁴

The burden of influenza infection and allergic rhinitis with their repercussions among adolescents should be accurately estimated so that guidelines for prevention can be drawn up.

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A safe solution

The letter from Sanchez-Bayle *et al*,¹ partially describing a study on the administration of hypotonic intravenous fluids adds little to the safety of childrens receiving intravenous fluids. The deaths of at least 50 children attributable to the administration of hypotonic intravenous fluids in clinical settings, associated with increased circulating levels of antidiuretic hormone, have been described.

Typically, these are previously healthy children with gastroenteritis or in the post-operative phase after minor surgical procedures.² At least six or seven children have died in the UK in this manner within the past 5 years,³ with some of these deaths currently being investigated by the Police Service of Northern Ireland.

Although the routine prescription of hypotonic intravenous fluids may be safe if the volumes administered are tightly restricted, and with close plasma electrolyte and fluid balance monitoring, the fact is that around the world, we have demonstrated that in clinical practice we are unable to give these fluids in such a manner, resulting in the needless deaths of previously healthy children.

Furthermore, there is absolutely no advantage in routinely giving a fluid with tonicity below that of 0.45% saline, and certain high-risk groups, such as those with established hyponatraemia, gastroenteritis or in the post-operative state, should only ever receive isotonic fluids. The use of isotonic fluids such as sodium chloride 0.9% with glucose 5% will adequately deal with “maintenance” glucose requirements in most children.

Given the clear dangers associated with the routine administration of the most hypotonic intravenous fluids, and given the clear lack of advantage in their use, I am surprised that Sanchez-Bayle *et al*'s study was granted ethical approval. Deaths because of this mechanism are rare, and I will be interested to see how many thousands of children these authors intend to study to show the safety of sodium chloride 0.3% with glucose 5% in this setting.

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