

Recurrent visits and admissions of children with asthma in central Saudi Arabia

To the Editor

I read the interesting study by Al-Yami et al¹ on the recurrent visits and admissions of children with asthma in central Saudi Arabia. I have 4 comments on the aforementioned study.

First, Al-Yami et al¹ stated that children aged 1-6 years had the highest exacerbation. This critical age group involvement might trigger parental concerns on the prognosis of asthma. It is a common observation that asthmatic children tend to outgrow their diseases as they grow older. Apart from season, and inhaled corticosteroid usage, age constitutes an important independent risk factor for exacerbation. From infancy to adolescence, each year of life reduces per se the risk of a severe exacerbation by 15% and similarly increases the achievement of control in children treated for asthma.²

Second, Al-Yami et al¹ stated that males outnumbered females, and that no gender difference existed in terms of emergency department (ED) presentation, ward admissions, and pediatric intensive care unit admissions. Actually, this observation was also stressed in an American study³ where among inpatients with acute asthma, male children were more common than female children. Among children, girls did not differ from boys according to asthma history, pulmonary index scores, or hospital length of stay. The results in children are probably explained by prevalence differences, since no gender differences were seen in markers of asthma severity or treatment.

Third, socio-economic status (SES) represents an additional limitation that ought to be considered in Al-Yami et al's study.¹ Lower SES (measured according to education level), is associated with several indices of worse asthma morbidity, particularly worse asthma control as asthmatics of lower SES might have higher exposure to indoor (for example, cockroaches, tobacco smoke) and outdoor (for example, urban pollution) allergens, thus increasing the risk for exacerbations.⁴

Fourth, 60% of the parents of the studied asthmatic children in Al-Yami et al's study¹ were able to demonstrate the correct administration of anti-asthmatic medications. It is, therefore, expected that their asthmatic children should have no or the lowest exacerbations. Yet, they had the greatest exacerbations. The authors did not present any explanation for that interesting observation. I presume that the following 2 points could explain that observation: 1. Having had at least one exacerbation is an important risk factor for recurrent exacerbations suggesting an 'exacerbation-

prone' subset of asthmatics. Factors underlying the 'exacerbation-prone' phenotype are incompletely understood but include extrinsic factors: cigarette smoking, medication non-compliance, psychosocial factors, and co-morbidities such as gastroesophageal reflux disease, rhinosinusitis, obesity, and intolerance to non-steroidal anti-inflammatory medications; as well as intrinsic factors such as deficient epithelial cell production of the anti-viral type I interferons (IFN-alpha and IFN-beta). A better understanding of the biologic mechanisms of host susceptibility to recurrent exacerbations will be important for developing more effective preventions and treatments aimed at reducing the significant cost and morbidity associated with this important global health problem.⁵ 2. Pediatric asthma education is associated with statistically significant decreases in mean hospitalizations and mean ED visits and a trend toward lower odds of an ED visit.⁶ Additionally, it improves the lung function and feelings of self control, reduces absenteeism from school, number of days with restricted activity, number of visits to an ED, and possibly number of disturbed nights.⁷ It is possible that parents of the studied asthmatic children were not offered adequate education on all aspects of asthma. Education was probably focused only on correct administration of anti-asthmatic medications, but little was offered on other long-term preventive measures. In an American study,⁸ the overall proportion of education content fully discussed with parents of asthmatic children was 66%. Areas that dealt with acute management (how to manage an asthma attack: 75%) and medication administration (how to use a metered dose inhaler: 81%) were most likely to be discussed. Content dealing with ongoing chronic management and collaborative care planning (discussing goals of management: 44%; providing written guidelines for acute management: 44%) was significantly less likely to be discussed. Education reports differed significantly based on symptom severity and socio-demographic characteristics. Therefore, implementation of a suitable education program focusing on the entire asthma spectra must be provided regularly to asthmatic children and their parents as that is considered an essential step in the routine care of asthmatic patients.

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Reply from the Author

We thank you for your interest in our manuscript "Recurrent visits and admission of children with asthma

in central Saudi Arabia,"¹ and for the valuable points you highlighted. In fact, we do agree with most of these mentioned points; however there are some comments that we would like to mention in response to your points.

As you mentioned, several studies stated that males out-numbered females in this problem, and the age group from 1-6 years was the most common age group for exacerbation. These findings are in accordance with the findings of our study.

Concerning the socioeconomic level as a confounding factor, we totally agree that (as we stated in the paragraph on limitations of the study), there are other confounding factors that should have been taken into consideration in the study.

As regards the association between the education and the number of exacerbations, this association could not be interpreted as a cause and effect relationship, simply because the study was a cross-sectional one that does not prove such types of relationship. However, this relationship was explained partly by the possibility of upgrading the knowledge of parents through their frequent visits to the hospital ER due to the frequent exacerbations in their children.

Your interest in this study is highly appreciated.

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Related topics

Al-Yami SM, Mohajer KA, Al-Jeraisy MI, Batarfi AM, Abolfotouh MA. Recurrent visits and admissions of children with asthma in central Saudi Arabia. *Saudi Med J* 2010; 30: 921-924.

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