

Letter to the Editor

The findings in the retrospective study of hospital admissions for asthma in Finland during 1976–95, reported in the closing issue of *Pediatric Allergy and Immunology* Volume 11, pointed to a 2.8-fold increase in admissions, a 7.5-fold increase in the prevalence of asthma (as indicated by asthma reimbursements), and insignificant variations in admissions to intensive care units (ICUs) (1). However, the source data that underlie the relational conclusions are handled in a vague mathematical manner and, moreover, seem to be way out of comparison from anything that I am aware of. This is the basis of my confusion and distrust of the theses presented in the article.

The authors open the Results section by stating that there were 2,554 admissions for asthma in 1976 and 6,550 in 1995. Two sentences further on, these data are presented as rates per 1,000 children 'of the same age-group and gender' which, by an unexplained mathematical operation, amount to 7.3 (1976) and 20.2 (1995), respectively, per 1,000 population younger than 20 years of age. Now, when dividing the number of admissions with the number of population in age-groups (1,405,203 and 1,284,149 for the years 1976 and 1995, respectively), these rates are 1.8 (1976) and 5.1 (1995) per 1,000 population younger than 20 years of age. It is true that the increase from 1.8 to 5.1 is the same 2.8-fold as found by the authors, but the question really is: how many asthma admissions per general age cohort do the Finns really have and what can we, outside Finland, learn from these data?

Let me point out that a US survey that analyzed data from 1974 to 1994 also found an increased rate of admissions for asthma in children younger than 15 years of age, which, in the final year (1994), was 0.3 per 1,000 population younger than 15 years of age (2). We have studied the same type of data in Croatia and found that in 1998 there were 1,144 admissions for asthma among persons younger than 15 years of age, amounting to a rate of 1.27 per 1,000 population younger than 15 years of age (3). Therefore, it turns out that in comparison to American children in 1994, Croatian children in 1998 attended hospital because of asthma approximately

four times more frequently, but the Finnish children in 1995 did so 16 times more frequently, or even 66 times, if the rate of 20.2 per 1,000, as stated by the authors, is used. At first we tended to interpret the discrepancy between our data and the US data as a result of poorer out-patient treatment in Croatia, coupled with general mandatory health insurance granting easy free access to in-patient treatment. We are now completely confused by the Finnish data. So far, we, and not we alone, would tend to credit the Finnish colleagues with having achieved the optimum in asthma treatment. Now we are wondering if we are seeing the same disease with the same, guideline-fitted glasses. The variations in asthma prevalence and differences in the years for which our data are available simply cannot account for such variations in hospital admissions. I believe that other factors may play a role: the friendliness of hospitals achieved in many affluent societies may make parents less resentful of in-patient treatment; and the various health systems of insurance and reimbursement may simplify the indications for admission. However, before any further consideration, we need to have straightforward data on the admission rates for asthma in Finland as well as in other countries.

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References

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Response

Dear Dr Darko Richter,

First of all we like to thank you for your interest in our paper *Acute childhood asthma in Finland: A retrospective review of hospital admissions from 1976 to 1995*. At first glance your comments made us somewhat confused, but after some consideration we were able to understand the point that you are making. Basically, the aim of our study was to evaluate whether the severity of childhood asthma has changed during the period 1976–95 in Finland. Data concerning hospital admissions, in general, were recorded, but the intensive care admissions, as well as data for special reimbursement for asthma medication, were of particular interest. We focused on the increase, and not on the rates, of hospital admissions. The third sentence in the first paragraph of our results ('The admission rates per 1,000 children of the same age-group and gender were 7.3 in 1976 and 20.2 in 1995.') might be misleading: It should rather be: 'The **sum of** admission rates per 1,000 children of the same age-groups and same gender were 7.3 in 1976 and 20.2 in 1995.' In the original Fig. 1 the same information is given and accordingly only the size of each age-group is given. The confusion is apparently caused by the fact that the rate of admissions/year has been misinterpreted from this very figure. To your question 'How many asthma admissions per general age cohort do the Finns really have?', our data concern only pediatric patients. Accordingly, data per any general age cohort cannot be discussed, based on this current paper, only the specific age-groups comprising individuals of 0 to 19 yr of age.

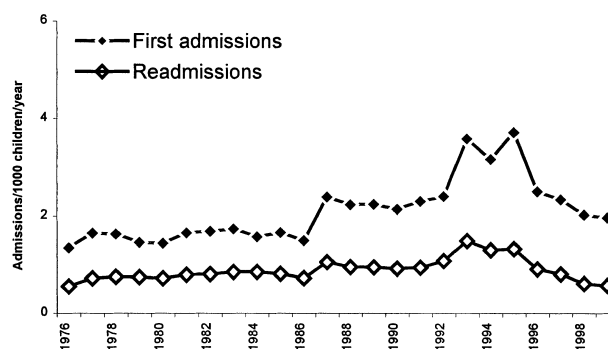


Fig. 1. The annual first admission rates/1000 children (0–19 years) for asthma in Finland from 1976 to 1999.

We are, however, pleased to be able to present the questioned rate of hospital admissions for asthma during childhood, and thus specify the annual first admission vs. re-admission per patient, extending the follow-up period to 1999. The yearly rate of patients younger than 20 years of age who were admitted for asthma (re-admissions excluded) increased in Finland until 1995 whereafter a decrease was observed: 1.3 per 1,000 in 1976; increasing to 3.7 per 1,000 in 1995; decreasing to 2.0 per 1,000 in 1999 (see Fig. 1). Similarly, the number of re-admissions for asthma and the number of children receiving special re-imbursement for asthma medication has shown a decrease since 1995, which also confirms the beneficial results of therapy for childhood asthma in Finland.

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