Low asthma prevalence in Turkish children

To the Editor:

We read the article "Lower prevalence of asthma and atopy in Turkish children living in Germany" by Kabesch et al. [1] with great interest. Asthma prevalence appears to be affected by genetic background as well as atopy, and environmental factors. The recently published International Study of Asthma and Allergies in Childhood (ISAAC) report documents lower prevalences in Eastern Europe, Greece and Russia (<5%) than in western countries, and Turkey is also among these low prevalence countries regarding figures reported in epidemiological studies. A nationwide epidemiological study including an ISAAC-based questionnaire was conducted among 46,812 children aged 0–17 yrs residing in 27 provinces in Turkey in 1996, and the lifetime and current (within last 12 months) prevalences of asthma were 14.7 and 2.8% respectively [3]. Personal and familial atopy were the most prominent risk factors for occurrence of asthma in children. The current prevalences of asthma and wheezing were higher among children residing in coastal areas than in those living inland. The prevalences among adult Turkish immigrants reported from Sweden and Belgium are similar to the mean figures for Europe [4, 5].

Germany simultaneously received workers not only from Turkey but also from many eastern countries during the 1960s. The workers were only accepted after a detailed medical examination (chest radiography, total blood count, urine analysis, physical examination, etc.) and were mostly from a low socioeconomic class. However, this selection of healthy workers was later de facto omitted, and Germany received many political refugees after 1980. At present, the Turkish minority makes up 2% of the population of Germany. Although some of the Turks living in this country have taken German citizenship, most of them continue to have an active relationship with their relatives in Turkey and frequently visit their homeland. They have usually preserved their living and dietary habits despite this long residency period abroad. The breastfeeding rates are close to 90%. The children spend most of their first years at home with their parents, and those born in Turkey receive bacille Calmette-Guerin vaccination routinely. Although the number of people within the same house is declining, it is higher than the European average. There is no detailed documentation regarding the ventilation and heating characteristics of their houses. The rate of having pets at home is presumably rising, but is lower than the figure for Europe [6].

Recent epidemiological studies have revealed significant differences in dietary habits between children in the preschool and school age groups. The consumption of poultry, fish, fresh fruit and vegetables increases with age. There are also differences in dietary intake between people residing in different regions of Turkey. Fresh fruit and vegetables, fish and vegetable oil are less frequently consumed in Eastern Turkey, and fish is consumed most commonly in Northern Turkey. Although there is no detailed information about the dietary intake of Turkish immigrants in Germany, changes in dietary intake have been reported among Turkish immigrants in Sweden [8].

References


From the authors:

We think that the readers of the European Respiratory Journal should remember the following information from our paper [1]. Firstly, nocturnal intermittent positive pressure ventilation (NIPPV) improves chronic hypoventilation in neuromuscular disorders. This improvement continues in the long term. Secondly, the mechanisms on which the relief of chronic hypoventilation rely are complex. However, our data demonstrated that these mechanisms do not include change in muscle fatigue or lung mechanics. Thirdly, NIPPV reversed sleep disruption and increased respiratory drive. These changes closely paralleled the decrease in day-time arterial CO2 tension. As shown in fig. 2 in our original paper [1], there was a good relationship between the decrease in arterial CO2 tension and the increase in the slope of the rebreathing test. Moreover, as soon as 6 months after implementation of NIPPV, both arterial CO2 tension and respiratory drive were improved in almost all patients. At 1 yr, in two patients (i.e. patients 4 and 14) the slope of the CO2 rebreathing test remained unchanged. Patient 4 remained hypercapnic overtime (i.e. arterial CO2 tension above 6 kPa). In patient 14 central respiratory drive improved 104 boulevard Raymond Poincaré, 92380 Garches, France.


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References
Epidemiological studies in groups with different prevalences within the same population are valuable in revealing the associated risk factors. We believe that studies to be carried out in co-ordination with foreign institutions among Germans, Turkish immigrants and citizens in Turkey will provide valuable information, especially for the prevention of asthma.

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References

From the authors:
We are grateful for the comments contributed by A.F. Kalyoncu and Z.T. Selçuk regarding our article "Lower prevalence of asthma in Turkish children living in Germany" [1]. This letter adds further insight into the most recent epidemiological data available on childhood asthma in Turkey. We agree that a wide array of living conditions and changes in allergen exposure as well as dietary habits might influence the prevalence of asthma and atopy in children of different ethnic origins. It can also be speculated that risk factors such as breastfeeding, vaccination status, crowding and housing may contribute to the differences observed in comparisons of asthma prevalence between different countries.

We found a lower prevalence of asthma as well as atopy and bronchial hyperresponsiveness in Turkish children living in Germany compared to their German peers. A similar study, evaluating allergic sensitization, wheezing and eczema in Turkish children living in Berlin, Germany also reported lower levels of allergic diseases in these children [2]. Analysing small subgroup samples of these children, the study found an association between the degree of assimilation into a German lifestyle and the increase in atopic diseases. However, this does not sufficiently explain the low prevalence of asthma and atopy observed in Turkish children living in Germany compared to Turkish children living in Turkey. Selçuk and coworkers [3] report a lifetime asthma prevalence of 14.7% in a nationwide Turkish survey of 46,813 children between 0 and 17 yrs of age using an ISAAC-based questionnaire. This data is comparable to the range of asthma prevalence (9.8–17.4%) reported previously in studies from Turkey [4–7]. Therefore, it further supports our finding that the lifetime prevalence of asthma is significantly lower in Turkish children living in Germany (5.3%) compared to those living in Turkey [1]. Recent reports from Turkey indicate that the asthma prevalence is higher in coastal and metropolitan areas than in rural and inland regions [3]. As no information is available to us regarding the origin of Turkish immigrants to Germany, we cannot rule out the possibility that these immigrants were drawn mainly from rural and inland areas of Turkey. However, the children of Turkish origin included in our study were mainly second-generation immigrants who had lived in Munich since birth (78.2%).

Changes in dietary habits might be related to the low prevalence of asthma and atopy in Turkish children living in Germany. Although we do not have any data on the dietary habits of our study population, it seems unlikely that the Turkish children would differ in their dietary intake from Turkish children living in Turkey, unless the dietary habits of Turkish urban and rural populations were different.

None of the other environmental risk factors we assessed, including pets, passive smoking, number of siblings and family history of asthma, sufficiently explained the effect of Turkish origin in our multivariate analyses. Therefore, the presence of a selection bias due to the immigration of more healthy people still seems likely. Gene/environment interactions could provide an alternative explanation for the observed differences in asthma prevalence between Turkish and German children living in Germany. However, our study design was not aimed at answering questions of gene/environment interaction and therefore our data do not provide a means of discussing this issue. We completely agree with the final conclusion drawn by A. Fuat Kalyoncu and Z.T. Selçuk that studying groups of different ethnic origin within a population is a valuable tool for the identification of risk factors for asthma and atopy. Furthermore, studies of gene/environment interactions including minorities are needed in the framework of an international and European cooperation.

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References