Nocturnal Wheeze in Asthmatic Patients

To the Editor:

Nocturnal wheeze and cough are considered to be common features of asthma. Previous studies suggested that nocturnal asthma was related to many factors, including allergen exposure, decreased mucociliary clearance, or circadian rhythm of circulating hormones and nervous tone. However, little is known about the influence of sleep on persistent wheeze in asthmatic patients. To study whether asthma attacks worsen in the night, we recorded the wheezing sounds for 3 days in patients with sustained asthma attacks.

Thirty-two adult patients (14 female and 18 male; mean [SE] age, 67 [2] years) complained of sustained wheeze over 72 h and were enrolled in this study. All subjects fulfilled the clinical criteria of bronchial asthma.2 The patients, from whom written informed consent was obtained, were isolated in a quiet, single room. A microphone was attached to the suprasternal notch and connected to a tape recorder. The recorder ran for 5 min every hour using an internal time unit for 72 h for a total of 6 h. Wheeze was recorded from 9:00 AM on the first day. Apparent depth of sleep was carefully observed and recorded. Audible wheeze every hour from the tape recorder was counted as one, and nonaudible wheezing was counted as zero by investigators. We calculated wheeze distribution in four 6-h periods.

Mean (SE) vital capacity percent predicted was 87 (7), and mean (SE) FEV₁ percent predicted was 66 (7), when they were stable. From 11:00 PM to 5:00 AM, a sharp decline in wheeze counts was noted in the patients (Fig 1). Wheeze counts from 11:00 PM to 5:00 AM were significantly lower than those in the other three periods (p ≤ 0.001, by analysis of variance and post hoc test). Wheeze counts in the other three periods did not differ significantly.

Nighttime exacerbation of wheeze is one of the characteristics of asthma. In the present study, however, we showed that wheezing in asthmatics is suppressed during sleep. Sleep reduces spontaneous cough in patients with chronic respiratory disease. As well, a reduction in wheeze may be related to sleep itself.

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Chronic Cough Revisited

To the Editor:

I read with interest the article by Palombini et al (August 1999). As the authors indicate, chronic cough is very common and may adversely affect the quality of life of many patients. The authors have once again highlighted asthma, postnasal drip, and gastroesophageal reflux disease (GERD) as important causes of chronic cough. By their own admission, they employed more tests than other studies,2–4 and may adversely affect the quality of life of many patients. The study, as it

Figure 1. Wheeze counts in four 6-h periods over 72 h in 32 asthmatic patients, 18 wheeze counts/period over 72 h. Data were expressed as mean ± SE. 1100–1700 = 11:00 AM to 5:00 PM; 1700–2300 = 5:00 PM to 11:00 PM; 2300–0500 = 11:00 PM to 5:00 AM; 0500–1100 = 5:00 AM to 11:00 AM.