Year-to-Year Variation in Release of Bet v 1 Allergen from Birch Pollen: Evidence for Geographical Differences between West and South Germany

Abstract:
Background: The release of the aeroallergen Bet v 1 from pollen is a major determinant in the etiology of allergic airway disease due to birch pollen. Objective: We determined the release of the major birch pollen allergen Bet v 1 from pollen of birch trees growing in 2 different geographic regions in Germany for 2 consecutive years. Methods: Catkins were collected during pollination in 2002 and 2003 from 82 healthy trees in South (Munich) and West Germany (North Rhine-Westphalia). The release of Bet v 1 from pollen samples was determined by a Bet v 1-specific ELISA. Results: Pollen from South Germany released about 3 times more Bet v 1 than those from West Germany in both 2002 and 2003 (p = 0.034 and p = 0.007, respectively). This was independent of the number of pollen during the pollen flight season. In 2003, the release of Bet v 1 from pollen was more than 5 times higher than in 2002 in both regions (South Germany 6.1 times, p < 0.001; West Germany 5.4 times, p = 0.003). Conclusions: Despite large individual differences, there seem to be regional and year-to-year variations in Bet v 1 release from birch pollen. Therefore, the combination of pollen count and release of Bet v 1 from this pollen...
must be assessed to estimate Bet v 1 exposure reliably.

Stichworte: Birch; Pollen; Seasonal; Bet v 1; Regional

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