

Short communication

Ragweed (*Ambrosia*) pollen presence in Livorno, Central Italy:
aerobiological and sensitization data

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Abstract

We have studied Ragweed pollen concentration in the atmosphere of Leghorn (Livorno), where Ragweed is not widespread. Our data, from 1991 to 1995, confirm the presence of Ragweed pollen in the atmosphere of Leghorn in low concentrations (highest value of 11 pollen grains m^{-3}) from August to the end of September. Even if the sensitization level in our area is 6.76%, the clinical significance of Ragweed pollinosis is still very low.

Keywords: Ragweed pollen; Specific IgE; Sensitization; Aerobiology

1. Introduction

Ragweed pollen is highly sensitizing and is the commonest cause of pollinosis in North America (King and Norman, 1986). In Italy the native Ragweed is *Ambrosia maritima*, while the introduced species are: *A. artemisiifolia*, *A. trifida*, *A. tenuifolia* and *A. psilostachya*. In Leghorn, two species are present: *A. maritima* and *A. psilostachya*. The first aerobiological record of Ragweed pollen was obtained at our station in 1985. In that year, only a few pollen grains were recorded in September. In following years Ragweed pollens were recorded in August and in September. The aim of this study has been to investigate the presence of Ragweed pollen in our area and to relate it to the sensitization rate of our population.

2. Materials and methods

The aerobiological data for the years 1991–1995 were obtained using a pollen trap (VPPS 2000 Lanzoni) placed on the open terrace of the Hospital in Leghorn, at about 22 m above street level. The area around the pollen trap is urbanized. Located between the Tyrrhenian sea and low hills, Leghorn has a phytoclimatic position, with typical Mediterranean vegetation. Sampling was performed daily on slides. Sampling method, slide preparation and reading have been performed according to the directions of the Italian Association of Aerobiology (Mandrioli, 1988). The airflow rate was 10 l/min; the data are reported as daily concentration of pollen grains per cubic meter of air ($p\ m^{-3}$). The sensitization in the patients examined in our Department of Allergology was evaluated by serum IgE determination (Fast: Florescence Allergo-sorbent Test).

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Table 1
Presence of Ragweed pollen in Leghorn

Year	Total pollen (p m ³)	Highest concentration (p m ³)	Day month
1991	43	11	2/9
1992	20	2	24/8
1993	48	5	17/8
1994	13	4	15/8
1995	25	9	29/8

Table 2
Presence of Ragweed pollen above the threshold of three pollen grains per cubic meter of air

Year	Concentration (p m ³)	Day/month
1991	11	2/9
1992	—	—
1993	5	17/8
	4	28/8
1994	4	15/8
1995	9	29/8

3. Results

The total annual concentration of Ragweed pollen and its highest concentration, are shown in Table 1, for the 5 years studied. Comtois (1988) has fixed the symptomatological threshold value at 3 grains per cubic meter of air. Using this threshold value, the days in which pollen count exceeded 3 p/m³ of air are shown in Table 2. The research by specific IgE has provided the following data: 22 positive patients out of 325 (6.76%), for the 5 years studied.

4. Discussion and conclusion

In the Leghorn area the Ragweed pollen concentration was very low throughout the period 1991–1995. Sensitivity to Ragweed has started to become evident: research by specific IgE has shown a positive response in 6.76% of the patients examined, while intraderm test has given 9.6% positive responses (Goracci and Cavicchi, 1975) and by prick test in 6.1% of the cases (Goracci et al., 1986), although they were polysensitive. The incidence of sensitization in our population is in agreement with that found in the Trieste area (Northern Italy) (Pizzulin Sauli et al., 1992), but is lower than in Busto Arsizio (Pozzi et al., 1992). Specific immunotherapy for Ragweed pollen was never prepared

in our laboratory in the past 20 years. So it seems that in Leghorn the incidence of sensitization to Ragweed pollen has never had a clear clinical significance, probably because the total amount of pollen in our atmosphere is still very low.

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