

G. LICCARDI¹, G. BALDI², A. BERRA³, A. CICCARELLI⁴, M. CUTAJAR⁵, M. D'AMATO⁶,
R. D'ANGELO¹, D. GARGANO⁷, D. GIANNATTASIO⁸, G. LEONE⁹, M. LO SCHIAVO¹⁰,
F. MADONNA¹¹, C. MONTERA¹⁰, R. MONTI¹², R. PARENTE¹³, A. PEDICINI¹⁴, A. PIO¹⁰, M. RUSSO¹,
A. SALZILLO¹, A. STANZIOLA⁶, A. VATRELLA¹³, F. MANZI¹, MB. BILO¹⁵

Allergy in urban elderly population living in Campania region (Southern Italy). A multicenter study

On behalf of Italian Association of Hospital and Territorial Allergologists (AAIITO - Campania Region)

¹Department of Pulmonology, Haematology and Oncology, Division of Pulmonology and Allergology, High Speciality "A. Cardarelli" Hospital, Naples, Italy

²Respiratory Medicine Unit. ASL (district 66), Salerno, Italy

³Respiratory Allergy Unit, G. Da Procida Hospital, Salerno, Italy

⁴Allergy Unit, Presidio Sanitario Polispecialistico "Loreto Crispi", Naples, Italy

⁵Allergy Center, Division of Internal Medicine, Ospedali Riuniti Penisola Sorrentina, Sorrento, Naples, Italy

⁶Department of Respiratory Disease, "Federico II" University, AO "Dei Colli", Naples, Italy

⁷Allergy Unit, High Speciality "San Giuseppe Moscati" Hospital, Avellino, Italy

⁸Respiratory physiopathology and allergy, High Speciality Center, "Mauro Scarlato" Hospital, Scafati, Salerno, Italy

⁹Allergy and Clinical Immunology Unit, High Speciality "Sant'Anna and San Sebastiano" Hospital, Caserta, Italy

¹⁰Allergy and Clinical Immunology. "G. Fucito" Hospital and University Hospital, Salerno, Italy

¹¹Allergy Unit, ASL (Sanitary District 12), Caserta, Italy

¹²Private Center for Allergy Diagnosis, Ischia, Naples, Italy

¹³Department of Medicine and Surgery, University of Salerno, Italy

¹⁴Unit of Allergology, Division of Internal Medicine, "Fatebenefratelli" Hospital, Benevento, Italy

¹⁵Allergy Unit, Department of Immunology, Allergy and Respiratory Diseases. University Hospital Ancona, Italy

KEY WORDS

allergy; allergic rhinitis; allergic sensitization; bronchial asthma; Campania region; elderly; hypersensitivity

Corresponding author

Gennaro Liccardi
Department of Pulmonology
Haematology and Oncology
Division of Pneumology and Allergology
High Speciality "A. Cardarelli" Hospital
Piazzetta Arenella 7, 80128 Naples, Italy
Phone: +39 081 747 3335-4-3
Fax: + 39 081 747 3331
E-mail: gennaro.liccardi@tin.it

Summary

Given the increasing life expectancy observed in Western countries, there is a marked interest to know more about how aging could influence respiratory health. The aim of our study was to assess the prevalence, clinical characteristics and age of onset of allergic sensitization and clinical symptoms in a sample of atopic elders living in Campania region area (Southern Italy). Fourteen Allergy units or Centres examined a total of 462 patients. In this context 215 (46.53%) had positive skin prick tests (SPTs) to at least one allergen and were diagnosed with respiratory allergy. Parietaria represents the most common sensitizing agent in elders living in Campania region, followed by dust mites, grass pollen and Olea europaea. A relatively high percentage of atopic subjects suffered from respiratory symptoms at a fairly advanced age, namely 8.3% at 60-64 years, 10.2% at 65-70 and 5.7% at > 70 years. In conclusion, the prevalence and clinical significance of airway allergic sensitization in the elderly living in Campania region is more significant than expected in latter stages of life. Physicians should not neglect the role of atopy as a risk factor for the onset of allergic respiratory symptoms even in elderly patients.

To the Editor

Given the increasing life expectancy observed in most Western countries, there is a marked interest to know more about how aging could influence respiratory health. Aging influences not only the respiratory function but also the immune response to infectious agents and the environment (allergens and air pollutants) (1).

It has been shown that asthma and allergic diseases are not uncommon in the elderly, and the prevalence of asthma appears to be increasing over the past decades (2). Although allergens and the allergic sensitivity have a lesser impact compared to younger populations, allergy remains a relevant problem in the elderly (3). Furthermore, multi-morbidity is certainly the most important problem related to old age, being associated with disability, institutionalization, poorer quality of life and higher frequency of adverse events related to multiple concomitant treatments, and ultimately death (4). Other aspects on the management of respiratory allergic disorders in the elderly compared to other age groups were also described (5-19). Since Campania region is inhabited by the youngest population in Italy, studies on airway allergic sensitization have been carried out mainly in children and adults.

The aim of our study was to assess the prevalence, clinical characteristics and age of onset of allergic sensitization and clinical symptoms in a sample of atopic elderly subjects living in the Campania region (Southern Italy).

Fourteen Allergy units or Centres belonging to the Italian Association of Hospital and Territorial Allergologists (AAITO - Campania region), uniformly distributed over the whole territory of Campania region (13.595 Km², 6,074,882 inhabitants) participated in this cross-sectional study. The same protocol was shared by all participating centers; each Centre collected the results of allergy consultations of consecutive outpatients, aged > 60 years, referred for suspected or current respiratory allergy (asthma and/or rhinitis). Patient enrollment started on January 1 and ended on June 30, 2014.

A case report form (CRF) specifically designed for this study was completed during the screening consultation of each patient. The standardized form reported: demographic data, type and duration of respiratory symptoms, pet ownership, results of the skin prick tests (SPTs), age of onset of respiratory symptoms. The diagnosis of respiratory allergy has been carried out according to the International Guidelines (20,21).

The commercial allergen extracts used for screening SPTs were provided by ALK-Abellò Group (Milan, Italy). A standard panel of allergens was used, including *Dermatophagoides pteronyssinus* and *D. farinae*, *Alternaria alternata*, *Cladosporium herbarum*, cat and dog dander, *Parietaria*, Grass pollen mix, *Artemisia vulgaris*, *Olea europaea*, *Betula pendula*, *Cupressus sempervirens* and *Corylus avellana*. This allergen panel covers the main causative agents of respiratory allergy in Campania region. Positive (10 mg/ml

histamine HCl) and negative (saline solution in glycerine-phenol solution) controls were used. SPTs were performed and interpreted according to International Guidelines (22); results were read after 15 minutes and expressed as the mean of the major wheal diameter plus its orthogonal. A skin reaction of 3 mm or greater was considered positive. Wheal profiles were outlined using a fine-point marking pen and transferred by adhesive tape onto the patient's form.

Patients with chronic infectious diseases, malignancies or dys-metabolic diseases, severe cutaneous disorders, negative skin reaction to histamine, or undergoing treatment with drugs interfering with skin response were excluded from the study (23,24). A total of 462 patients were examined (females 291, 62.9%; males 171, 37.01%). Two hundred and fifteen subjects (46.53%) had positive SPTs to at least one allergen and were diagnosed with respiratory allergy, the remaining 247 (53.46%) were SPTs-negative. Female sex was predominant either in atopic (females 135, 29.2%; males 80, 17.3%) and non-atopic elders (females 156, 33.8%; males 91, 19.7%). *Parietaria* represents the most common sensitizing agent in elderly allergic patients living in Campania region, followed by dust mites, grass pollen and *Olea europaea* (figure 1), irrespective of age of symptom onset (< 50 or > 50 years) (figure 2). This data differs from previous reports on children and adults living in Campania region and Naples area, where the most common sensitizing agents were dust mites followed by *Parietaria*, Grass pollen and *Olea europaea* (25-28).

Although a significant proportion of allergic elders reported the first onset of respiratory symptoms under 40 years, a high proportion of atopic subjects suffered from respiratory symptoms first occurring in late adulthood namely 8.3% at 60-64 years, 10.2% at 65-70 years and 5.7% > 70 years (figure 3). More than a half of these elders experienced a late onset respiratory allergy, showing that late sensitization occurs more frequently than previously thought.

Only a small percentage of these subjects suffered from allergic respiratory symptoms during adolescence. As expected, individuals with non-allergic respiratory symptoms are less commonly seen in younger age compared to older age (figure 3).

In conclusion, our data show that the prevalence and clinical importance of airway allergic sensitization in the elderly living in Campania region is more significant than expected, especially in late adulthood. This finding should be taken into account by clinicians and allergologists, who should not neglect the role of atopy as a risk factor for the onset of allergic respiratory symptoms even in the elderly.

Authorship

All authors contributed equally in the writing and revision of the manuscript.

Figure 1 - Percentages of all elderly patients sensitized to common aero-allergens.

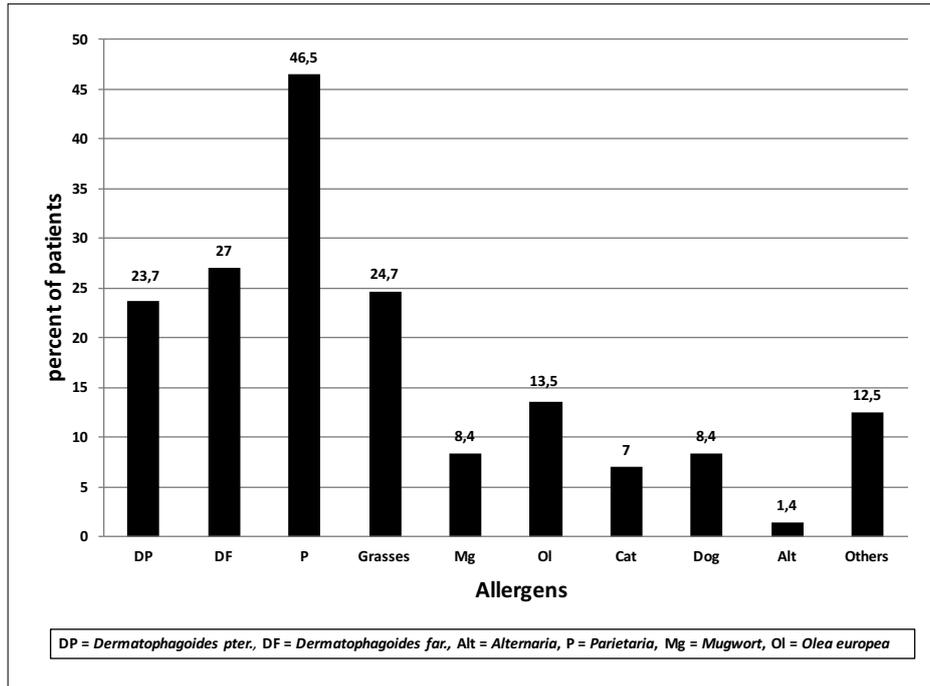


Figure 2 - Percentages of elderly patients sensitized to common aero-allergens according to the time of onset of symptoms (before or after 50 years of age).

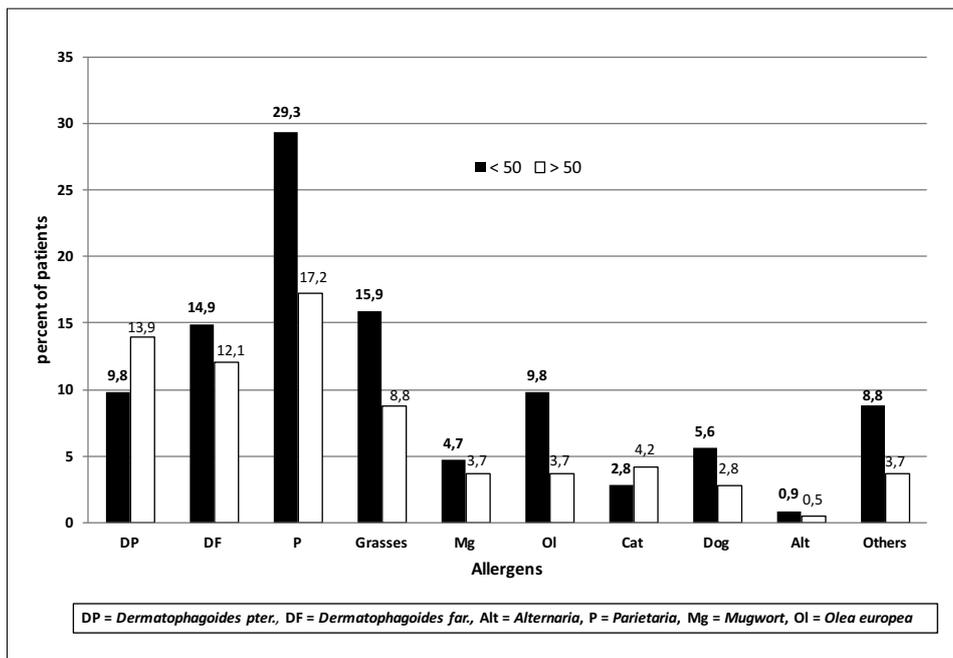
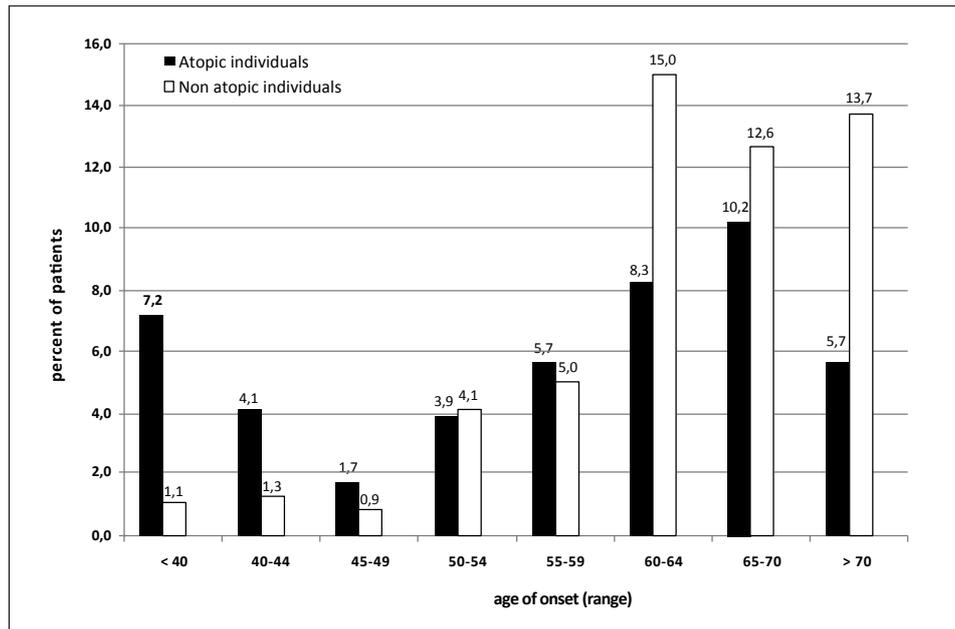


Figure 3 - Age of onset of respiratory symptoms in atopic / non atopic elderly patients.

Conflict of interest and financial resources

All authors declare that they have no conflict of interest and that the study has been carried out without any financial support.

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