BLOOD EOSINOPHIL COUNTS IN ASTHMATIC PATIENTS IN ITALY (EOS STUDY)

A. Rossi[1], A.Vaghi[2], S. Tognella[3], on behalf of EOS/AIPO Study Group[1]

[1]Centro Studi AIPO, Italian Association of Hospital Pulmonologists (AIPO), Milan – Italy; [2]Pulmonology Unit, ASST Rhodense-Salvini Hospital, Garbagnate Milanese (MI) - Italy, [3]Pulmonology Unit, Orlandi Hospital, Bussolengo (VR) - Italy

BACKGROUND

Asthma is a heterogeneous disease. Despite high doses of ICS with LABA, almost 20% of asthmatics may experience a poor control of the disease. It is estimated that a subgroup of those patients has persistent airway eosinophilia and frequent exacerbations. The identification of an “eosinophilic phenotype” can support the physicians to select a subgroup of potential responders to other treatments.

OBJECTIVE

To obtain data on eosinophilic blood counts in a real-life population of poorly controlled asthmatic patients in Italy, relating it with severity of disease.

METHODS

317 asthmatic patients (55±14.7years) in treatment with medium/high dose of ICS and LABA but poorly controlled disease according to GINA Guidelines were consecutive enrolled in 18 Italian pulmonary units (Table 1, Figure 1).

The clinical record and eosinophilic count were obtained for each patient.

The marker of eosinophilia was settled in the threshold of 4%.

Thus subjects of the present analysis was divided in **two groups** on the basis of the eosinophil count**:**

- ***EOS <4%***
- ***EOS ≥4%***

RESULTS

On average, the eosinophil count was 6.1% (±5.2).
In 58.7% of patients, eosinophils exceeded 4%.
Age, gender, smoke habits, ACT (Asthma Control Test) and comorbidities are not different in the two categories (EOS <4%, ≥4%). Nevertheless, patients with EOS ≥4% have a respiratory functional impairment (lower FEV1/FVC, Figure 2), a higher value of exhaled nitric oxide (Figure 3), and a greater number of exacerbations in the previous year (Figure 3).
Moreover, there is a correlation between the use of systemic corticosteroids and increased count of eosinophils (p=0.0009).

Table 1 – Participant Centres: Italian Region, Hospital, type of Unit, n. of subjects

Region	City	Hospital	Unit	N.
Basilicata	Matera	Ospedale Madonna delle Grazie	Pulmonology	22
Campania	Napoli	AORN Dei Colli - Ospedale Monaldi	Pulmonology-Federico II Univ.	7
Campania	Napoli	AORN A. Cardarelli	Pulmonology	8
Emilia Romagna	Bologna	AOU Sant'Orsola Malpighi	Pulmonology and Intensive Care	9
Emilia Romagna	Forlì	Ospedale GB Morgagni	Pulmonology	4
Lazio	Roma	Fondazione Policlinico Gemelli	Allergology	8
Liguria	Imperia	Ospedale Civile di Imperia	Pulmonology	1
Lombardia	Garbagnate Milanese	ASST Rhodense - Ospedale G. Salvini	Pulmonology	44
Lombardia	Mariano Comense	ASST Lariana - PO Cantù	Respiratory Rehabilitation	4
Marche	Torrette	AOU Ospedali Riuniti di Ancona	Pulmonology and Rehabilitation	13
Marche	Torrette	AOU Ospedali Riuniti di Ancona	Allergology	22
Piemonte	Veruno	IRCCS Fondazione Salvatore Maugeri	Respiratory Rehabilitation	25
Puglia	Cassano Murge	Istituti Clinici Scientifici Maugeri	Pulmonology	29
Sicilia	Palermo	CNR – IBIM A. Monroy	Sleep Respiratory Care	9
Toscana	Arezzo	Ospedale San Donato	Pulmonology and Intensive Care	13
Toscana	Prato	Azienda Sanitaria Toscana Centro	Allergology	15
Trentino Alto Adige	Bolzano	Azienda Sanitaria Alto Adige	Pulmonology	22
Veneto	Legnago	Ospedale Mater Salutis	Pulmonology	20
Veneto	Verona/Bussolengo	AOUI di Verona/Osp. Orlandi	Pulmonology	42

Figure 1 – Centres distribution

Figure 2 – FEV_1/FVC (%)

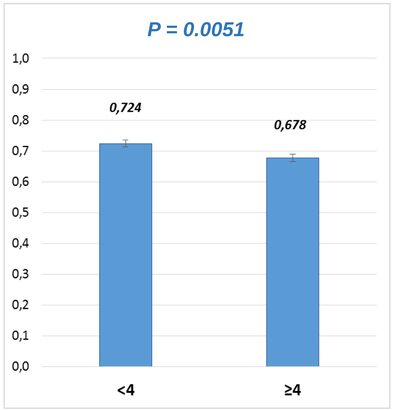


Figure 3 – FeNO (ppb)

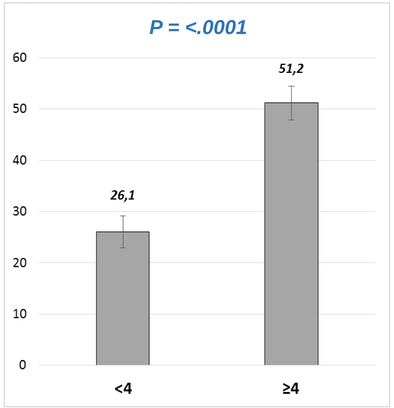
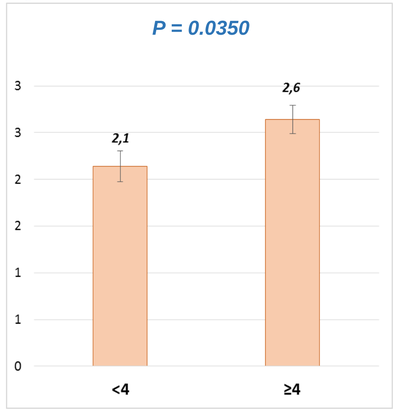


Figure 4 – Exacerbations (previous 12 months)



CONCLUSIONS

Our data suggest that **eosinophilia is present in patients with poorly controlled asthma, relates with the severity of disease and it should be considered as a marker for the therapeutic strategy.**

In conclusion, eosinophilia can be considered as an indicator of a possible predisposition to a phenotype of asthma more difficult to treat with medium/high dose of ICS/LABA inhalation therapy.