

SUPPLEMENTARY MATERIAL**Table 1. Criteria for the identification of NFA [modified from (6,12)]:**

Serrano-Pariente J, Plaza V. Near-fatal asthma: A heterogeneous clinical entity. *Curr Opin Allergy Clin Immunol*. 2017;17(1):28–35.

Plaza V, Serrano J, Picado C, Cosano J, Ancochea J, de Diego A, et al. [Clinical characteristics of the fatal and near-fatal asthma in *Alternaria alternata* sensitized patients]. *Med Clin (Barc)*. 2003 Nov;121(19):721–4.

- Dyspnea that prevents speech
- Decreased level of consciousness
- Hypercapnia (in general, PaCO₂>45–50mmHg)
- Admission to an ICU
- Respiratory or cardiopulmonary arrest
- Acute respiratory acidosis (pH < 7.35)
- Respiratory failure from acute severe asthma
- Orotracheal intubation
- Mechanical ventilation.
- Two or more episodes of pneumothorax or pneumomediastinum as a complication of an acute severe asthma attack
- Two or more hospital admissions for asthma despite long-term treatment with systemic glucocorticoids and other anti-asthma medications

Table 2. Risk factors for NFA

education, psychological, social, and economic

In adults(16, 17, 18):

- History of ICU admission because of asthma exacerbation and the need of mechanical ventilation
- Previous treatment with oral steroids
- A greater blood gases impairment (hypercapnia and acidosis)
- Presence of pulmonary hyperinflation on admission
- Education
- Psychological factors
- Family history of fatal asthma

In children [modified from (6,17,18)]:

- food allergy
- Poverty
- residence in an urban area
- race/ethnicity.
- longer duration of asthma
- male gender
- multiple emergency room visits in the year before an ICU admission.

Near-fatal asthma phenotypes

Tables 3 and 4 show the main NFA phenotypes described [modified from (6,21)].

Table 3. Different NFA phenotypes

	Rapid-onset NFA	Slow-onset NFA
Characteristics of patients	Young males	women
Triggers	Respiratory allergens Environmental pollutants Emotional stress NSAID intake	Respiratory tract infections
Clinical differences	Higher hypercapnia and acidosis Absence of lung sounds Generally a more rapid recovery	Higher number of previous emergency room visits and hospital admissions
Histological findings	Airway permeability Greater tightening of the muscular layer Neutrophils exceed eosinophils in the airways submucosa Higher proportion of mast cell degranulation	Mucous plugs Lung hyperinflation Loss of airway epithelial layer Mucous gland hyperplasia Eosinophils exceed neutrophils in the airways submucosa

Table 4. Characteristics of NFA phenotypes identified by cluster analysis

	Cluster 1	Cluster 2	Cluster 3
Patient characteristics	Older More frequent female Lowest level of education Frequent psychiatric comorbidity	Frequently current smokers Frequent psychiatric comorbidity	Younger More frequent male Frequently current smokers
Asthma characteristics	Late onset Very frequent severe persistent asthma Frequent regular medical care Very frequent past hospitalization for asthma	Intermediate position between cluster 1 and 3	Early onset Very infrequent regular medical care
Allergic and functional characteristics	At least one positive skin prick test:42% Sensitized to <i>Alternaria</i> or soybean:6 % FEV1 mean:69%	At least one positive skin prick test:71% Sensitized to <i>Alternaria</i> and soy bean:7% FEV1 mean:82%	At least one positive skin prick test:78% Sensitized to <i>Alternaria</i> and soy bean:26% FEV1 mean:81%
Therapeutic characteristics	ICS:91% Oral corticosteroids:21%	ICS:50%	ICS:30%
NFA attack characteristics	Longer hospitalization	Frequent impaired consciousness level and respiratory arrest Very frequent mechanical ventilation required Highest hypercapnia	Shorter hospitalization

Table 5. employments of the population included in the study

Unknown	4
Mechanic	1
Retired	3
Waiter	3
Textile-industry	1
Cleaning-maid	1
Nurse-asistant	2
Train driver	1
Insurance broker	1
Total	17