

Editorial

Suggestions for a uniform terminology in allergology and pneumology

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As authors tend to use different terms for the same entity or meaning, it may be the time for a uniformly use terminology in allergology and pneumology. The proposals reflect personal suggestions and are not authorized by any consensus conference, task force or specialized society. Presented are proposals for *concepts* – it was not intended to give *definitions*, which would open an even broader field of differing opinions. To avoid misunderstandings and to standardize scientific language, it seems sensible to agree on a single term – even if several alternatives are possible.

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Medical publishing is a spreading medical knowledge around the world, and English is generally accepted as the *lingua franca*. However, authors tend to use different terms for the same concept or meaning. It may, therefore, be the time for a uniformly used terminology in allergology and pneumology. The following proposals reflect personal suggestions and are not authorized by any consensus conference, task force, or specialized society. The hope is that this may offer an opportunity to break with some old traditions, and in addition, stimulate further discussions.

Presented are proposals for *terminology*, but it is not intended to establish *definitions*, which is a matter for a broader discussion. The proposals are based on pragmatic considerations, taking into account linguistic, etymological, and historical factors. Furthermore, positive terms have been favoured over negative ones, such as non-IgE-mediated allergy. A selection is presented, which does not claim to be exhaustive, and some terms may differ from common usage.

Allergology

Adrenaline

Other terms. Epinephrine, suprarenin.

Justification. Although the meaning of 'adrenaline' and 'epinephrine' is identical, it makes sense to harmonize the terms in the scientific community (1). Drug names should be standardized internationally to prevent prescribing errors (2). A long discussion preceded the first introduction of Henry Dale's preference for 'adrenaline' (3). Although 'adrenaline' is the British approved name, and 'epinephrine' is the recommended international non-proprietary name, most countries use the term 'adrenaline' instead of 'epinephrine' (4–7). Furthermore, 'adrenaline' reminds of its origin in the adrenal gland. The chemically correct term would anyway be dihydroxyphenylmethylaminoethanol (4). By analogy, the same should hold true for noradrenaline rather than norepinephrine.

Abbreviation. Not applicable.

Niggemann

Aeroallergens

Other terms. Inhalant allergens.

Justification. The term 'inhalant' may suggest a deposition in the upper or lower airways, which is not necessarily intended or meant. 'Aeroallergen' is a more general term, which comprises that allergens are in the air and not fixed or solid. The term is usually used as the counterpart to food allergens.

Abbreviation. Not applicable.

Allergen

Other terms. Antigen, atopen.

Justification. An 'allergen' is a protein, which is able to induce any allergic reaction, while an 'antigen' can also induce non-allergic, immunological-mediated reactions. The word 'atopen' is an old one formerly used for 'allergen'.

Abbreviation. Not applicable.

Allergic rhinoconjunctivitis

Other terms. Hayfever, pollinosis.

Justification. The term 'hayfever' is old fashioned or even wrong (8), as (i) fever is absent in most cases, (ii) hay is not the correct word for seasonal grass pollen, and (iii) hay or grass pollen are not the only important allergens in seasonal allergic rhinoconjunctivitis. Furthermore, it may be justified to use the combined term, because allergic rhinitis and allergic conjunctivitis most often occur together.

Abbreviation. ARC.

Allergology

Other terms. Allergy.

Justification. The term 'allergy' describes the clinical picture of clinically relevant allergic symptoms, but does not represent a heading. 'Allergology' is the science of 'allergy'.

Abbreviation. Not applicable.

Allergy

Other terms. Sensitization, atopy, hypersensitivity.

Justification. The term 'allergy' should only be used if there are clinically relevant allergic symptoms. 'Allergy' was first described by Clemens von Pirquet in 1906 (9). Today, the term 'allergy' should not be used for all unexpected reactions (10), but only for immunologically mediated ones. However, 'allergy' includes IgE and non-IgE mediated clinically relevant allergic reactions.

Abbreviation. Not applicable.

Anaphylaxis

Other terms. Anaphylactoid reactions, allergy, systemic allergy, severe allergy.

Justification. The term 'anaphylaxis' should be reserved for severe systemic IgE-mediated reactions, such as severe dyspnoea and/or cardiovascular collapse (11, 12). It should not be used for any type I allergic reaction such as generalized urticaria. 'Anaphylactoid reactions' describes non-IgE-mediated histamine induced clinical reactions, which resemble those of anaphylaxis (13).

Abbreviation. Not applicable.

Angioedema

Other terms. Quincke-oedema, angio-neurotic oedema.

Justification. The term 'angioedema' avoids person-cult (14, 15), when other terms describe the clinical entity as well. 'Oedema' alone is misleading, as any hypoalbuminemic oedema could be meant. 'Angioedema' has in the past often been called 'angio-neurotic oedema'; as it is not a consequence of neuroticism it is essential that neurotic is deleted from the term.

Abbreviation. Not applicable.

Atopic diseases

Other terms. Allergic diseases.

Justification. Diseases such as bronchial asthma, allergic rhinoconjunctivitis, and food allergy belong to the family of atopic diseases – whether or not they are associated with increased total IgE levels, the proof of specific IgE, or allergy. For example, atopic eczema is an atopic disease, although IgE plays a role in only two-thirds of

cases. Allergic diseases describe clinical entities with IgE-mediated clinical symptoms.

Abbreviation. Not applicable.

Atopic predisposition

Other terms. Atopic diathesis, atopic family background.

Justification. The concept of 'atopy' – first described by Coca in 1923 (16) – refers to the personal or familial tendency to produce specific IgE antibodies in response to allergens, usually proteins (10, 17). This is definitively not the same as clinically relevant allergy, but describes exclusively a predisposition. 'Diathesis' is old fashioned. 'Atopy' alone may not enough to describe what is meant by 'atopic disposition': the inherited propensity to be able to develop IgE sensitization and/or atopic diseases.

Abbreviation. Not applicable.

Atopic eczema

Other terms. Atopic dermatitis (AD), Atopic eczema dermatitis syndrome (AEDS), atopiform dermatitis, neurodermatitis, endogenous eczema, constitutional eczema, prurigo Besnier.

Justification. While 'atopic dermatitis' – first described by Wise and Sulzburger in 1933 (18) – has the ending 'itis', which may be infection or inflammation, the term eczema describes more accurately the main feature – namely the dry skin with hyperkeratosis = eczema. 'Dermatitis' may not be linked to eczema and is therefore not accurate enough. Given that allergy is also an important factor in many children (and adults) with eczema, and as a contrast to contact eczema, the word atopic should precede the word eczema. It seems correct that – as Eedy stated in 2002 – the terminology of 'atopic dermatitis' may further evolve with the passage of time (19). The same is true for 'atopiform dermatitis', proposed for a non-atopic form of eczema (20).

Abbreviation. AE.

Atopy patch test

Other terms. Patch test, skin patch test, epicutaneous test with type I allergens.

Justification. The 'atopy patch test' is an epicutaneous test; but instead of using type IV

allergens (such as metals or perfumes), typical immediate type allergens are used (aeroallergens or foods). Therefore, it is clearer to use the term 'atopy patch test' for the latter situation. 'Patch test' is too general and includes type IV epicutaneous tests.

Abbreviation. APT.

Chronic

Other terms. Daily, persistent, perennial.

Justification. The word 'chronic' should be preferred for symptoms, which last for weeks or months. However, it is not necessary that they will never disappear over time, even without medical interference. This holds true for 'chronic cough' (at least 3 months of symptoms) as well as for 'chronic urticaria' (defined as urticarial symptoms for at least 6 wk). 'Perennial' relates to the distribution over the year (see below).

Abbreviation. Not applicable.

Clinical type of reactions (immediate and/or delayed reactions)

Other terms. Early reaction, immediate type reaction, late reaction, late phase reaction, late type reaction, delayed reaction.

Justification. While the word 'early' just describes a time interval, 'immediate' may also indicate a mechanism. Similarly, compared with 'late' reactions; 'delayed' may be more pathogenically oriented. This may be valid for asthmatic, nasal and/or cutaneous (eczematous) reactions.

Abbreviation. Not applicable.

Complementary and alternative medicine

Other terms. Unconventional medicine, complementary medicine, alternative medicine, holistic medicine, naturopathy, etc.

Justification. The term includes the two most important aspects of 'unconventional' medicine in relation to scientific medicine and is therefore more appropriate than other more misleading or biased terms. To 'complement' is meant in the sense of to 'supplement' – not to 'complete'.

Abbreviation. CAM.

Food allergy

Other terms. Nutritional allergy, food hypersensitivity.

Justification. ‘Food allergy’ is the term for any clinically relevant immunologically mediated allergic reaction to a food (21), irrespective of whether the food adds to the nutritional value of a diet and is therefore the preferable term over nutritional allergy. The same is true for the term ‘food allergen’. Food allergy includes IgE- and non-IgE-mediated allergic reactions to food (10).

Abbreviation. FA.

Food dependent exercise-induced anaphylaxis

Other terms. Exercise induced anaphylaxis, food hypersensitivity.

Justification. ‘Exercise-induced anaphylaxis’ describes any state of anaphylaxis occurring around 20–60 min after physical exercise. As food is most frequently the responsible allergen in exercise-induced anaphylaxis, this should be included in the term if food is involved. Furthermore, the abbreviation ‘EIA’ has already generally used for ‘exercise induces asthma’ for many years. The same holds true for ‘food dependent exercise induced urticaria’ as a minor variant of FDEIA.

Abbreviation. FDEIA, FDEIU.

Hypersensitivity

Other terms. Allergy, pseudo-allergy, intolerance.

Justification. ‘Hypersensitivity’ is the term for any reaction to allergens – whether it is immunologically mediated or non-immunologically mediated intolerance or any other form (22). As an example, ‘food hypersensitivity’ includes food allergy (IgE and non-IgE-mediated) and non-allergic food hypersensitivity (formerly called ‘food intolerance’) (10). ‘Pseudo-allergy’ is an old term for non-allergic food hypersensitivity, although it has still some defenders (23). ‘Intolerance’ is the umbrella term for any adverse response – irrespective of its origin.

Abbreviation. Not applicable.

Insect venom allergy

Other terms. Insect allergy, venom allergy, insect sting allergy, venom sting allergy, hymenoptera venom allergy.

Justification. ‘Insect venom allergy’ correctly implies that the patient reacts to the proteins in the venom of insects such as honeybees and wasps with an allergic reaction. The patient is not reacting to the sting directly (mechanically), but to the ‘injected’ substances. Any other term would be less informative or misleading, e.g., venom allergy could be caused by snakes. Hymenoptera venom allergy may be too restrictive in view of the new allergies to, i.e., midges.

Abbreviation. IVA.

Multiple sensitizations, multiple allergies

Other terms. Polysensitization, polyvalent sensitization, polyallergy, polyvalent allergy.

Justification. The word ‘multiple’ just indicates ‘many’, while ‘poly’ is often used in a broader sense for many other situations. The same may be applicable for ‘multiple allergies’, instead of ‘polyallergies’.

Abbreviation. Not applicable.

Oral allergy symptoms

Other terms. Oral allergy syndrome, pollen associated food allergy, pollen-associated food symptoms.

Justification. Usually, a ‘syndrome’ is a symptom complex or a more or less complex clinical entity. Therefore, ‘symptoms’ may be more appropriate than ‘syndrome’. In the case of cross-reactivity between pollen and food, clinical symptoms are usually restricted to the mouth – but not in all cases. Therefore, the umbrella term for all symptoms is ‘pollen-associated food allergy’ (see below).

Abbreviation. OAS.

Oral food challenge; double-blind, placebo-controlled food challenge

Other terms. Oral food provocation, food provocation, food challenge, oral challenge.

Justification. ‘Challenge’ describes better the challenge of the task not the more negative aspect of a provocation. An oral food challenge is best performed as a double-blind, placebo-controlled food challenge (DBPCFC).

Abbreviations. OFC; DBPCFC.

Perennial

Other terms. Persistent, chronic.

Justification. While ‘chronic’ is a time-based description (meaning constant, continuing), ‘perennial’ relates to the distribution over a calendar year.

Abbreviations. Not applicable.

Pollen associated food allergy

Other terms. Food allergy, oral allergy syndrome, oral allergy symptoms, pollen allergy, pollen-associated food symptoms.

Justification. ‘Pollen associated food allergy’ is the umbrella term used when allergic symptoms are induced by cross-reactivity of pollen and foods. ‘Oral allergy symptoms’ is a part of ‘Pollen associated food allergy’ – those symptoms, which are observed in and around the mouth. However, ‘Pollen associated food allergy’ is preferable, since sometimes generalized or even systemic symptoms may occur.

Abbreviation. PAFA.

Sensitization

Other terms. Sensitivity, sensibility, sensibilization.

Justification. The term ‘sensitization’ describes the fact that an IgE-mediated immunological response can be detected in the patient – whether by measurement of specific serum IgE or by skin prick test. The term ‘sensitivity’ could be confused with ‘sensibility’, which better describes a state of responding to emotional influences.

Abbreviation. Not applicable.

Skin prick test

Other terms. Skin test, prick skin test (PST), prick test.

Justification. The term ‘skin test’ is the umbrella term for any skin test (including SPT, APT, scratch, ‘Reibtest’, epicutaneous test, etc.). The term ‘skin prick test’ describes more precisely what is meant when a lancet is used to bring traces of an allergen extract or native food into the skin to look for immediate type sensitization.

Abbreviation. SPT.

Specific immunotherapy, specific subcutaneous immunotherapy, specific sublingual immunotherapy

Other terms. Hyposensitization, desensitization, desensibilization, hyposensibilization, allergy vaccination, allergen immunotherapy.

Justification. The term ‘specific immunotherapy’ should not be mixed up with any kind of vaccination, which is reserved for common immunizations for infectious diseases and has nothing in common with sensitization. Therefore, the term introduced by the WHO ‘allergy vaccination’ is not a good choice in my opinion. On the other hand, de- and hyposensitization recalls ‘sensitization’ rather than ‘clinically relevant allergy’, which is the indication for specific immunotherapy. In accordance with the above, one should use ‘Specific subcutaneous immunotherapy’ (SCIT) and ‘Specific sublingual immunotherapy’ (SLIT).

Abbreviation. SIT, SCIT, SLIT.

Specific oral tolerance induction

Other terms. Oral hyposensitization, oral desensitization, oral tolerance induction with food, oral immunotherapy.

Justification. So far, ‘oral desensitization’ or ‘oral hyposensitization’ has been used. We propose the term ‘Specific Oral Tolerance Induction’, because SOTI (i) seems to be a specific process (tolerance induction with cow’s milk seems not to induce tolerance to hen’s egg), and (ii) so far, at least in a subgroup of patients, it does not seem to have a long-term effect after termination of its regular intake, as could be shown for subcutaneous specific immunotherapy with aeroallergens (24). Furthermore, this term can also be used for drugs and other allergens.

Abbreviation. SOTI.

Pneumology

Aerosol therapy

Other terms. Inhalant therapy, nebulization.

Justification. ‘Aerosol therapy’ describes any therapy using aerosols for therapeutic purposes. This includes aqueous solutions, proteins and drugs, and may also be used independently whether nasal or lung deposition is targeted. Inhalant implies lung deposition, which is not necessarily meant.

Abbreviation. AT.

Bronchial hyperresponsiveness

Other terms. Airway hyperreactivity (AHR), airway hyperresponsiveness (BHR), bronchial hyperreactivity (BHR), airway hyperirritability, bronchial hyperirritability, airway hyperreagibility, bronchial hyperreagibility, reactive airway disease, bronchial sensibility, reactive airways dysfunction syndrome (RADS), cough variant asthma.

Justification. ‘Bronchial hyperresponsiveness’ is usually used for the underlying pathomechanism of bronchial asthma. However, the phenomenon of hyperresponsiveness can occur in upper and lower airways. Therefore, ‘airway hyperresponsiveness’ is the more general term and includes both nasal and bronchial hyperresponsiveness. The same holds true for the more neutral description of bronchial responsiveness (if no pathological meaning is implied). On the other hand, ‘responsiveness’ seems more suitable than ‘reactivity’ (25), because it better reflects the readiness. The other terms seem to have been used less in recent years, such as ‘reactive airway disease’ (26) or ‘reactive airways dysfunction syndrome’ (27).

Abbreviation. BHR.

Bronchiolitis

Other terms. Obstructive bronchitis, spastic bronchitis, asthmatoïd bronchitis, asthmatic bronchitis, wheezy bronchitis, asthma.

Justification. The term ‘bronchiolitis’ is a sub-entity of virally induced wheezing, restricted to more severe states of a virus infection, mainly caused by RSV, including marked hyperinflation, oxygen requirement, and fine crackles – usually occurring in infancy (28, 29). It should not be

used for the common obstructive bronchitis (30). Bronchiolitis can occur with and without pneumonia.

Abbreviation. Not applicable.

Bronchodilatation test

Other terms. Bronchospasmolysis test.

Justification. The term ‘bronchospasmolysis’ is old fashioned. As with ‘spastic bronchitis’, which is now called ‘obstructive bronchitis’, because not only a (muscular) spasm contributes to a bronchial obstruction. For the same reasons, the term ‘spastic’ or ‘spasmus’ or ‘spasmolysis’ should be abandoned. Instead, ‘bronchodilatation’ means the intention to dilate the bronchi – in whatever way (e.g. short term by beta-agonists or long-term by steroids). ‘Bronchodilatation’ is preferable to ‘bronchodilation’, as the action is better described.

Abbreviation. Not applicable.

Ciliary dyskinesia, primary ciliary dyskinesia

Other terms. Ciliary dysfunction, primary ciliary dysfunction, immotile cilia syndrome.

Justification. The term ‘ciliary dyskinesia’ describes any abnormality or impairment of ciliary movements. ‘Primary ciliary dyskinesia’ only includes inborn errors of ciliary dysfunction. ‘Immotile cilia’ would imply that a dysfunction of mucus transport is only given if the cilia do not move at all, while in several cases cilia are not immotile but nevertheless the clearance function is impaired because of dysfunction in the coordination of the ciliary beating.

Abbreviation. CD, PCD.

Compliance

Other terms. Adherence, concordance.

Justification. ‘Adherence’ is the more strict and negative expression for what the patient does not do – even if it is recommended. ‘Compliance’ just reflects the relation of collaboration without binding too strictly to the physician. On the other hand, adherence may merely be a euphemism for compliance (31). ‘Concordance’ is too ‘neutral’ – the view of the patient may be completely different and objectively not conducive.

Abbreviation. Not applicable.

Cystic fibrosis

Other terms. Mucoviscidosis.

Justification. Even 'cystic fibrosis' may not be an ideal term, as it does not indicate a systemic disease involving many organs. However, it is the more appropriate and modern than 'mucoviscidosis'.

Abbreviation. CF.

Exercise induced bronchoconstriction

Other terms. Exercise induced asthma.

Justification. While 'asthma' describes a complicated clinical entity, 'bronchoconstriction' just says what happens: airway narrowing after physical exercise. Furthermore, the abbreviation cannot be confused with 'exercise induced anaphylaxis'.

Abbreviation. EIB.

Infantile larynx

Other terms. Laryngomalacia, floppy epiglottis, soft larynx, tracheomalacia.

Justification. As the cause of stridor in infancy is a connate, transient softness of the cartilage of the larynx, the term 'malacia' may be less meaningful, as it means secondary changes. An example of a 'tracheomalacia' is the secondary softening of the cartilage wall of the trachea, i.e., because of impression of the vessels of a vascular ring malformation. The addition of the word 'infantile' may be adequate, because of the intermittent character and the favourable prognosis of the symptoms during infancy.

Abbreviation. Not applicable.

Inhalation

Other terms. Inspiration.

Justification. The term 'inhalation' describes the procedure of drawing an aerosol (wet or dry) into the lungs. 'Inspiration' is the more narrow term and means to only breathe in air. The same holds true for 'exhalation' vs. 'expiration'.

Abbreviation. Not applicable.

Inhaled corticosteroid

Other terms. Inhalant steroid, nebulized steroid.

Justification. The word 'inhaled' is the correct term for the fact that an aerosol is directed into the airways by inhalation of the patient. 'The term 'nebulized' is only valid if a compressor or ultrasound (wet) inhalation is used. However, today a dry powder inhaler or metered dose inhaler is usually preferred.

Abbreviation. ICS.

Lung function testing

Other terms. Pulmonary function testing, respiratory function testing, airway function testing.

Justification. The term 'respiratory' is more likely to reflect the whole respiratory system and therefore may also include aspects of diffusion and perfusion. 'Pulmonary function' means the same as lung function. However, as there is no difference, the more common term of 'lung function' should be used.

Abbreviation. LFT.

Obstructive bronchitis, recurrent obstructive bronchitis

Other terms. Spastic bronchitis, asthmatoïd bronchitis, asthmatic bronchitis, wheezy bronchitis, bronchiolitis, asthma.

Justification. 'Obstructive bronchitis' includes any narrowing of the bronchi in the context of respiratory tract infections. Mostly, virus induced wheezing is meant. Using the term 'obstructive bronchitis' does not imply that bronchial asthma is present or has to be expected in the future. Furthermore, this term leaves open whether the bronchial obstruction is induced by bronchospasm or by peripheral airway swelling. 'Spastic bronchitis' should be avoided, since peripheral airway obstruction by mucosal swelling is the more important pathomechanisms than bronchospasm (32). 'Asthma' is a vague expression including a spectrum of pathology and range of outcomes (33) in children (not infants), adolescents, and adults who do not only show symptoms during virus infections.

Abbreviation. OB, ROB.

Pneumology

Other terms. Pulmology, pulmonology, respiratory medicine, respirology, thoracic medicine, bronchology.

Justification. The root 'pneumo' is derived from old Greek, while 'pulmo' is derived from Latin. 'Logos' is old Greek anyway. It is problematic to combine two different languages within one word (34). Furthermore, 'pneumo' (and not 'pulmo') is used, e.g., in pneumonia and pneumonitis (35). The broader term would be 'respiratory medicine', which covers all kind of problems concerning the airways. However, the lung is in the centre of respiratory medicine.

Abbreviation. Not applicable.

Psychogenic and functional breathing disorders

Other terms. Functional disorders of breathing, dysfunctional breathing.

Justification. 'Psychogenic breathing disorders' should be the umbrella term, which includes both solely 'psychogenic disorders of breathing' (e.g. sighing dyspnea, hyperventilation) and 'functional breathing disorders' (e.g. vocal cord dysfunction). In daily practice, one can combine the two to 'psychogenic and functional breathing disorders'.

Abbreviation. Not applicable.

Spacer device

Other terms. Holding chamber, spacer.

Justification. A 'spacer device' describes the fact that both a standard distance and a volume is introduced between a metered dose inhaler and the mouth of the patient. Small or large volume spacers may be used.

Abbreviation. Not applicable.

Steroid unresponsive

Other terms. Steroid resistant, steroid insensitive.

Justification. The term 'steroid resistant', which is commonly used in conjunction with bronchial asthma – would imply an intracellular resistance because of deviated receptor mechanisms. 'Unresponsiveness' simply describes the missing clin-

ical effect after having administered steroids. 'Insensitivity' implies that higher doses may be effective, which is not always the case.

Abbreviation. Not applicable.

Conclusion

The terms for the fields of allergology and pneumology are proposed as a step towards a uniform terminology in international medicine. It seems to make sense to agree upon a single term – even when there are several alternatives.

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