ARIA - EAACI Care Pathways for Allergen Immunotherapy (AIT) in Respiratory Allergy

Pocket guide

This Pocket Guide was developed by an ARIA and EAACI joint study group from a background paper of the ARIA-MASK study group and from the EAACI guidelines on allergen immunotherapy.

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Allergen immunotherapy (AIT), the repeated administration of high doses of allergens to allergic patients, provides immune tolerance against the natural exposure to specific allergens. AIT may lead to the long-lasting remission of allergic symptoms and is the only disease-modifying intervention in IgE-mediated allergic respiratory diseases.

AIT is a proven therapeutic option for the treatment of allergic rhinitis, conjunctivitis and/or asthma using sublingual (SLIT) or subcutaneous (SCIT) routes.

However, AIT is more expensive than symptomatic treatments for allergic diseases (excluding biologicals). It is justified in patients with rhinitis otherwise uncontrolled by symptomatic treatment or as add-on to the regular asthma treatment in controlled or partially controlled asthmatic patients sensitized to house dust mites aiming to decrease asthma exacerbations, rescue and controller medication and to improve quality of life.

Care Pathways are structured multi-disciplinary care plans detailing the key steps of patient care. They promote the translation of guideline recommendations to their application in clinical practice.

Although many international and national AIT guidelines have been produced, this is the first care pathway on AIT.

This pocket guide applies to sublingual (SLIT) or sub-cutaneous (SCIT) immunotherapy.

Allergens to be administered

The decision to prescribe AIT should be based on relevant symptoms during allergen exposure, demonstration of sensitization to the relevant allergens and availability of good-quality extracts with proven efficacy.

Some allergen extracts are approved for marketing in the EU (list in annex) with some others also approved by national health agencies.

For certain products, efficacy and safety has been demonstrated in appropriate clinical studies in adults and children.The extrapolation to untested products, allergens or a different population from the one evaluated in the trial is not appropriate and not in line with current guidelines as there is no class-effect in AIT.

Both monosensitized and polysensitized patients can be treated. However, in the second case, the most clinically relevant allergen(s) should be used when symptoms are clearly present with allergen source exposure and when allergy tests confirm clinical findings.

Stratification of allergic patients

Precision medicine aims at the customisation of healthcare tailored to the medical management of each patient. The stratification of patients into subpopulations is the basis of clinical decision making.

In allergic diseases, patient stratification is required:

- To propose the appropriate pharmacotherapy.
- To identify the best candidates for AIT.
- To reduce the amount of time and resources needed to match the right patient to an optimal care management programme.
- To optimize costs as expensive therapeutic interventions are not necessary or suitable for all patients.

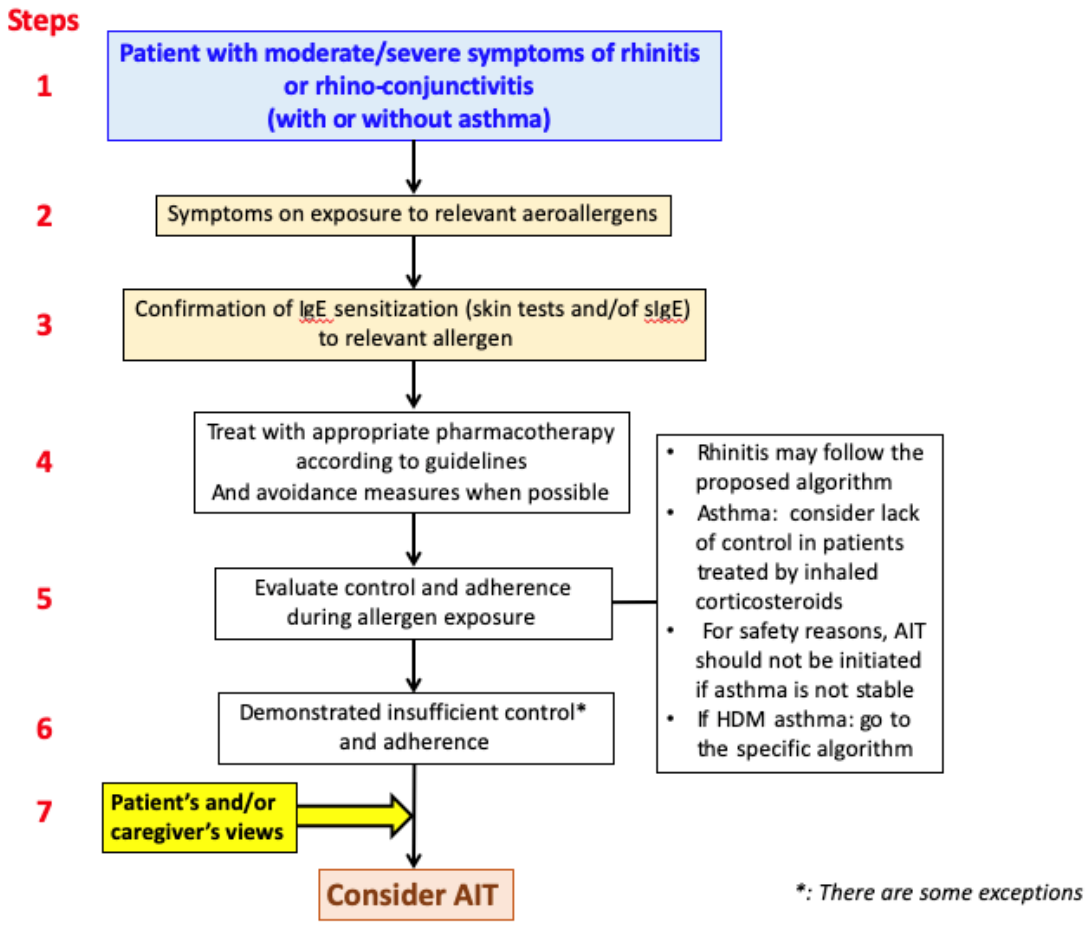
Patient stratification may also help to improve the patient's engagement.

Precision Medicine in the indication of AIT

1. Precise diagnosis with history, skin prick tests and/or specific IgE and, if applicable, component-resolved *in vitro* testing. In some cases where the above-mentioned diagnostic tools do not allow for precise diagnosis, allergen provocation testing (nasal, ocular and, in some cases, bronchial) may be needed.
2. Proven indications: Allergic rhinitis, conjunctivitis and/or asthma.
3. Symptoms predominantly induced by the relevant allergen exposure.
4. Patient stratification:
   - Poor control of nasal or ocular symptoms despite optimal medications according to guidelines with documented adherence to treatment.
   - Exceptions to requiring optimum symptomatic treatment prior to considering AIT would be unacceptable side effects of the medications.
   - Allergic asthma fully controlled under background asthma medication (see EAACI HDM-AIT GL)
   - However, for partially-controlled asthma, HDM-AIT may facilitate achieving asthma control (see EAACI HDM-AIT GL)
5. Good clinical documentation of efficacy and safety for the AIT product with relevant trials.
6. The patient's (and caregiver's) views represent an essential component.

Biomarkers

There are currently no *in vivo* or *in vitro* biomarkers validated for monitoring the efficacy of AIT although several potential candidates are being thoroughly investigated.



*: examples of exceptions: Thunderstorm-induced asthma, patient with moderate rhinitis and severe asthma during pollen season

mHealth

Apps can be used:

- For real-world evidence to confirm the efficacy of AIT in situations where randomized controlled trials are difficult to perform.
- To assess air quality index including pollen exposure and air pollution.
- By physicians and patients for stratification of patients and follow up.

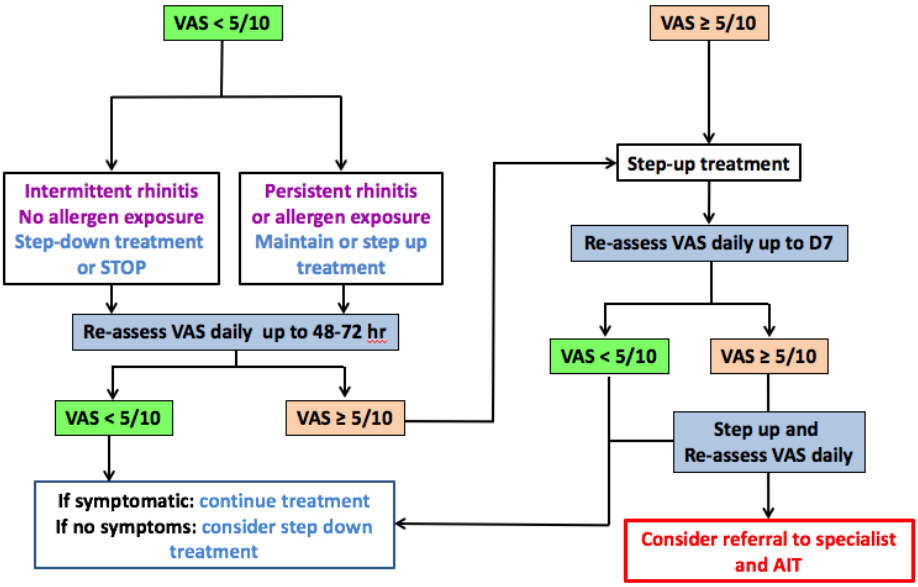
Rhinitis (with or without conjunctivitis) in adolescents and adults

The selection of pharmacotherapy and AIT for patients with AR and/or allergic conjunctivitis may be better supported by evidence algorithms to aid patients and health care professionals jointly determine the treatment and its step-up or step-down strategy depending on rhinitis control (shared decision making).

A simple algorithm is proposed and only represents an aid for physicians to determine the treatment for their patients.

Treatment algorithm using visual analogue scale (VAS)

In the case of remaining ocular symptoms, add intra-ocular treatment



AIT: allergen immunotherapy, VAS: visual analogue scale,

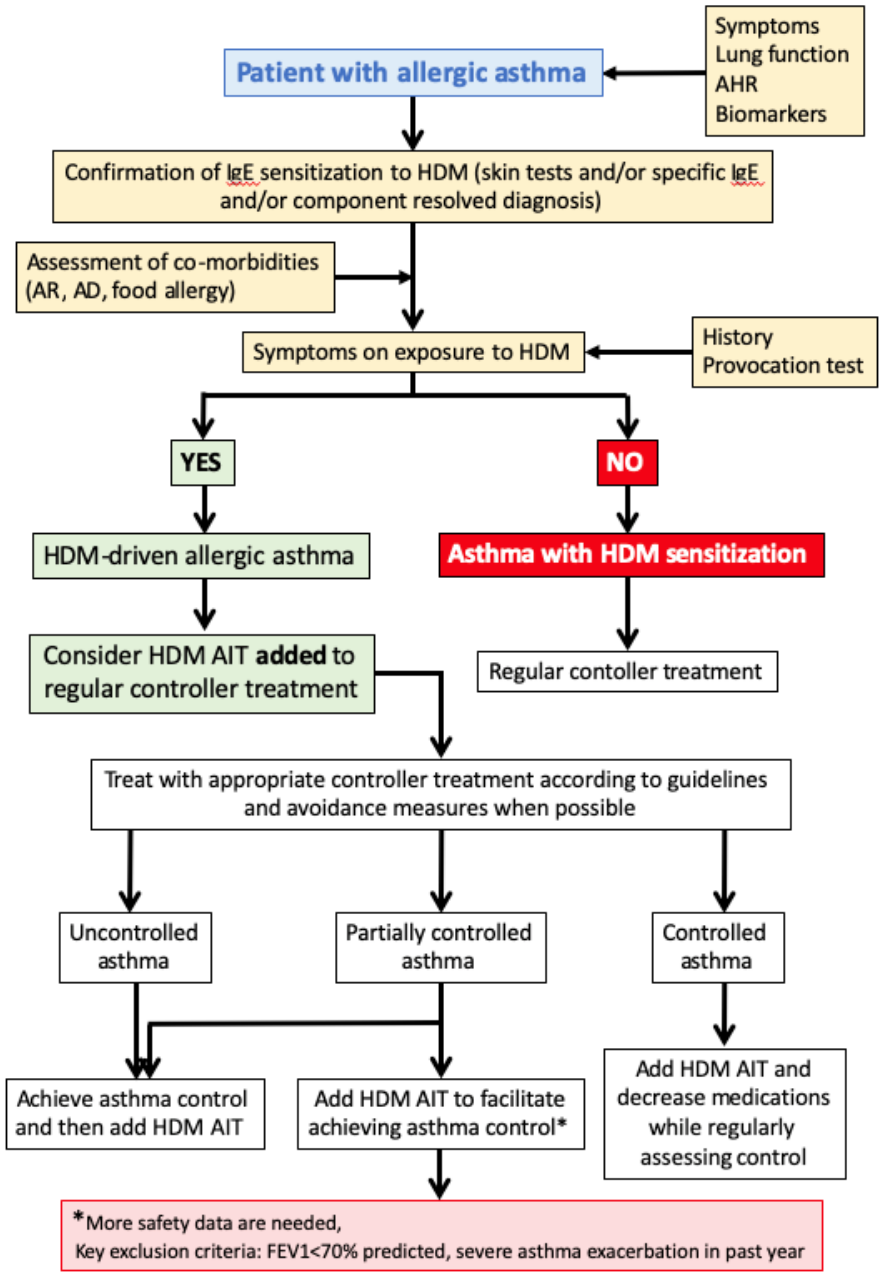
Rhinitis (with or without conjunctivitis) in children

AIT is effective, has long-term effects after cessation and may delay or prevent the onset of asthma.

AIT can be initiated in children with moderate/severe rhinitis that is not controlled by appropriate medications according to guidelines.

Asthma

An algorithm for HDM-driven allergic asthma diagnosis and management is proposed by EAACI Guidelines.



For patients with concomitant allergic rhinitis and sensitized to house dust mite - with persisting asthma symptoms despite low-moderate dose of inhaled corticosteroids - SLIT can be considered, provided FEV1 is >70% predicted.

House dust mite SLIT should initially be used as an add-on therapy to controller treatment, and reduction in asthma controllers should be performed gradually under the supervision of a physician.

Immunotherapy is not indicated for the treatment of acute exacerbations and patients must be informed of the need to seek medical attention immediately if their asthma deteriorates suddenly.

Multimorbidity

One strength of AIT is that it can help control all allergic diseases related to a specific allergen, including rhinitis, conjunctivitis and asthma.

Safety

Subcutaneous immunotherapy (SCIT)

Local reactions: A typical reaction is redness and swelling at the injection site immediately or several hours after the injection. Sometimes, sneezing, nasal congestion or hives can occur.

Systemic reactions: Serious reactions to injections are very rare but require immediate medical attention. Symptoms of an anaphylactic reaction can include swelling in the throat, wheezing or tightness in the chest, nausea and dizziness. The most serious reactions develop within 30 minutes after the injection, and patients are advised to wait in their doctor's surgery for at least 30 minutes after an injection. Severe bronchospasm can also occur, especially in patients where asthma is not controlled.

Sublingual immunotherapy (SLIT)

Allergen drops or tablets have a more favourable safety profile than injections. Initial dosing should be performed in the doctor’s surgery, and patients are advised to remain in the surgery for at least 30 minutes after administration. Thereafter, SLIT can be administered at home once the first dose has been given under the supervision of a physician.

Allergic reactions: The majority of patients will experience mild local reactions of the oropharyngeal passage. This is usually controlled by predosing with an antihistamine 30 minutes before the administration of SLIT. Sometimes, sneezing, nasal congestion or hives can occur. Anaphylaixs is rarely described.

In some countries, SLIT tablets include a warning about possible severe allergic reactions, and adrenaline-auto injectors are routinely recommended. This is not the case in Europe.