Management of OIT Reactions

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What Do You Need To Do Before Starting OIT

- Must assess and control asthma in all asthmatics (intermittent as well as persistent asthmatics) and monitor asthma in all escalation visits
- Consider asthma controller therapy in mild intermittent asthmatics
- Educate parents: uncontrolled asthma is a risk for bad outcome from systemic reactions and stress the importance of using ICS
- Assess and control environmental allergies and the seasonal exacerbations

What Do You Need To Do Before Starting OIT

- Medications available at home: at least two Epinephrine autoinjectors, bronchodilator, antihistamines
- Educate parents/patients about potential triggers for severe reactions: (exercise, fatigue, menses, excitement, empty stomach)
- Parents and older patients must be comfortable administering Epinephrine and to know how to use albuterol

What Do You Need To Do Before Starting OIT

- Address to overcome needle and Epinephrine phobia
- We need to ask ourselves “why diabetics young and old don’t have the same level of needle phobia??”
- Utilize your nurse /OIT educator to educate the parents, ER staff and many primary care physicians are telling patients “NOT to use Epinephrine unless it is a real bad reaction!”
- If parents are not willing to follow your recommendation in administering Epinephrine when indicated, should not start OIT

What Do You Need To Do During OIT

- Instruct proper dosing during illnesses
- Provide CLEAR action plan and how to contact you is case of reactions
- Clear instructions what to do after treating allergic reactions at home; dose reductions for few days or weeks depending on the severity, prolong intervals between up-dosing…
- Strongly consider stopping treatment in patients who have repeated reactions due to noncompliance

Early Escalation Systemic Reactions

- Early escalation systemic reactions:
  - Treat the reaction, ?any potential triggers
  - Dial back; lower dose and implement longer time between escalations
  - If continued reacting; Consider SLIT or stop

Preston, 12 years-old (born October 2009)

- Milk allergy, Mild Intermittent Asthma, Seasonal Allergic Rhinitis, GERD
- Milk allergy Hx: breast fed, age 4 months Similac added, acute anaphylaxis (cough, wheezing, hives, ambulance, ER, Epi…..)
- His previous allergist followed labs every few years:
  - 2015 Milk IgE >100 KU/L (total IgE 819 KU/L)
  - 2018 Milk IgE >100 KU/L (total IgE 855 KU/L) (allergy immunotherapy 2018-21)
  - 2020 Milk IgE 75.4 KU/L (total IgE 477 KU/L)
- Accidental ingestion of milk in 2021 resulted in severe anaphylaxis
- I saw him in March 2021 , started milk OIT in May 2021

Preston, 12 years-old (born October 2009)

- Started on Breo 100/25 daily prior to starting OIT
- Milk OIT: Slow protocol, start date 5/3/21, escalation every two weeks
- On January 20th 2022, during escalation visit he received 20 ml of milk:
  - 20 minutes later C/O itchy mouth, no difficulty breathing or wheezing but appeared anxious, treated with Epinephrine 0.3 IM
  - within 2 minutes, generalized itching and giant hives that spread all over
  - Second Epinephrine 0.3 IM given, Benadryl 50mg and Zyrtec 10 mg
  - Throat clearing and cough, no wheezing; Nebulized Epinephrine 0.3 ml in 2 cc NS. 80 minutes later (asymptomatic 40M), Prednisone 20 mg x2 (2nd 6 hours)
- What would you do?

Preston, 12 years-old (born October 2009)

- Discussed with parents all options, parents and patient wanted to continue OIT, with the desire to include milk in daily diet if achievable
- Decreased the daily dose to 5ml milk (last tolerated dose was 15 ml)
- Escalation every month
- As of late May 22, he is taking 20 ml of milk daily

Late Escalation Systemic Reactions

- Late escalation systemic reactions:
  - Treat the reaction, ?any potential triggers
  - Go back to the last tolerated reaction or lower and proceed
  - May consider implementing longer time between escalations
  - Recurrent severe reactions; consider achieving minimal protective dose (300mg protein)

Triggered VS No Triggered Reactions

- When identifying a trigger, avoidance generally decreases the chances of future reactions without significant changes to the escalation schedule (example exercising after dosing)

- No trigger reactions require changes in dosing schedules and may still happen

Eosinophilic Reactions During OIT

- Two types of eosinophilic reactions:
  - (ELORS) Eosinophilic Esophagitis Like Oral Immunotherapy Related Syndrome, also known as OITIGER (oral immunotherapy- induced gastrointestinal symptoms and peripheral blood eosinophil responses)
  - Classic EoE

Eosinophilic Reactions During OIT

- ELORS / OITIGER:
  - Early in the course of OIT
  - Abdominal pain, nausea, vomiting; timing is not related to the dose taken
  - Unlike EOE, no difficulty swallowing, choking or food impaction
- Risk factors for developing ELORS include:
  - Higher starting dose of OIT
  - Higher fold increase during the early up-dosing phase
  - Higher baseline absolute eosinophil count

Prevention and Treatment of ELORS / OITIGER

- Prevention of ELORS / OITIGER :
  - Obtain a baseline eosinophil count in all patients starting OIT
  - Start low and escalate very slow even in patients with high threshold, as a rule never start at a dose >300 mg protein
- Treatment of ELORS / OITIGER
  - Reduce dose by 50% or more until symptoms and eosinophilia resolve
  - May consider a 5-day course of oral prednisone (no data available)
  - If no resolution occurs, reduce dose further or stop OIT until symptoms resolve
  - Consider GI consult/endoscopy and biopsy

Eosinophilic Reactions During OIT

- EOE:
  - The second type ,EoE, resembles the classic presentation of EoE. It appears late in the course of OIT, often when patients have already reached their maintenance dose, and is not necessarily accompanied by peripheral eosinophilia
  - Treatment options : Dupilumab, high-dose PPI, topical steroids
  - OIT dose reduction to 300 mg vs OIT discontinuation
- If EoE symptoms persists, consider OIT discontinuation