

Mepolizumab does not prevent all aspirin-induced reactions in patients with aspirin-exacerbated respiratory disease: A Case Series



Hannah Martin, MD, Nora Barrett, MD, Tanya M. Laidlaw, MD
Brigham and Women's Hospital, Boston, MA



Rationale: Aspirin-exacerbated respiratory disease (AERD) is a triad including nasal polyposis, asthma, and NSAID sensitivity. The effects of anti-IL-5 treatment on the severity of aspirin-induced reactions are unknown.

Methods: This was a retrospective chart review of the 3 patients with AERD in our clinic who had undergone aspirin challenge or desensitization while on treatment with mepolizumab.

Results:

- Two Caucasian females and one black female with AERD, ages 38-49y, underwent oral aspirin desensitization after being treated with mepolizumab for 3-13 months.
- The patients' AERD had been diagnosed between 2-25 years prior, with 1-2 sinus surgeries prior to the desensitization.

Patient #1: Aspirin-induced reaction included nasal congestion, headache, itching, and rhinorrhea with a drop in FEV1 of 12% from her baseline.

Patient #2: Aspirin-induced reaction included wheezing on lung exam with no change in her FEV1 and the development of hives and pruritus of her upper body.

Patient #3: Aspirin-induced reaction included pruritus, nasal congestion, wheezing on lung exam with a drop in her FEV1 of 11% from her baseline, and protracted severe abdominal pain and vomiting, for which IM Epinephrine was administered and a tryptase, drawn 7 hours after the onset of symptoms, was 19 ng/ml.

Patients with AERD who are on the anti-IL-5 agent mepolizumab can still react during an aspirin challenge

Conclusions: Based on this case series, we conclude that patients with AERD who are on anti-IL-5 treatment with mepolizumab can still develop aspirin-induced reactions, including severe and systemic symptoms. Further controlled research is warranted to determine if anti-IL-5 treatment may lessen or change the reaction symptoms.



Table 1. Patient Characteristics

Patient	Age	Gender	Ethnicity	# of Polyp Surgeries Prior to Challenge	Date of Nasal Polyp Diagnosis	Current medications	Length of Mepolizumab Treatment
1	48	F	White	2	2016	Montelukast, Zileuton, Antihistamines	3 months
2	49	F	White	2 (4 sinus surgeries)	1990s	ICS-LABA, Tiotropium, Fexofenadine, Diphenhydramine	13 months
3	38	F	African Descent	1	2016	ICS-LABA, ICS, Montelukast	6 months

Table 2. Symptoms on Mepolizumab Prior to Aspirin Challenge

Patient	FEV1 (L)	FEV1 % Predicted	SNOT-22 Score	ACT	Subjective Symptom Control	Sense of Smell?	Polyp Present?
1	1.81 L	72%	95	N/A	Mild	None	Yes
2	1.84 L	60%	N/A	N/A	Prevention of Flares (poor baseline control)	None	Yes
3	2.22 L	67%	59	15	Poor	None	N/A

Table 3. Reaction Characteristics

Patient	Maximum aspirin-induced fall in FEV1	Symptoms during aspirin-induced reaction	Labs
1	-12%	Nasal congestion, Headache, Pruritus, Rhinorrhea	N/A
2	No Change	Pruritus, Hives, Wheeze	N/A
3	-11%	Pruritus, Severe Abdominal Pain, Nausea, Vomiting, Wheezing	Tryptase: 19.4 ng/ml