Alpha-gal Syndrome Complicating the Management of Suspected Pancreatic Exocrine Insufficiency

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BACKGROUND

IgE antibodies to the oligosaccharide galactose-α-1,3-galactose (α-gal) are an important cause of allergic reactions to mammalian meat and other mammal-derived products. The symptoms of α-gal syndrome (AGS) can involve urticaria or anaphylaxis, but increasingly we are aware that GI tract symptoms, including diarrhea, are also a major feature of AGS.[1,2] Pancreatic exocrine insufficiency (PEI) is a common cause of diarrhea and treatment involves the use of pancreatic replacement enzymes (PRE). PRE are porcine derived and contain α-gal. Patients receiving PRE who are α-gal IgE positive are at risk for allergic reactions and GI symptoms due to α-gal sensitivity.[3-5] Here we reviewed patients with suspected PEI and concomitant α-gal IgE sensitization in the practice of one gastroenterologist in Virginia.

METHODS

Retrospective chart review was carried out using inclusion criteria of i) diarrhea, ii) low fecal elastase (<200 µg/g feces), and iii) α-gal IgE sensitization (>0.10 kU/L).

RESULTS

15 patients were identified with mean fecal elastase of 123 and median IgE α-gal level 0.96 kU/L (Table 1). 9 patients had normal pancreas on CT scan, 2 had atrophic changes with fatty infiltration of the pancreas, 2 had ductal changes consistent with early chronic pancreatitis and 2 had cysts (4 and 8 mm in size). 5 had other GI issues that may have contributed to diarrhea and were treated (colectomy, gastric bypass, collagenous colitis, fructose intolerance, and Keytruda treatment). 9 improved off of mammalian-containing food products and 3 of these did not require PRE. 11 patients received PRE. Of 5 patients with pre-existing systemic allergy symptoms to mammalian meat, 1 improved off of mammalian products and did not require PRE, 1 had increased diarrhea with Creon and was lost to follow up, 1 tolerated Creon with pruritus, 1 experienced hives from Creon but successfully underwent office-based desensitization, and 1 patient avoided PRE due to the severity of allergy symptoms. 6 patients without the classic cutaneous allergy symptoms of AGS tolerated PRE, though 1 developed some urticaria.

Table 1. Clinical Data

Characteristics	Total Cohort (n=15)
Age, mean years (range)	59.5 (19-80)
Sex, female, n (%)	9 (60%)
Race, Caucasian, n (%)	15 (100%)
Fecal Elastase, mean µg/g fecal material (range)	123 (49-183)
IgE to α-gal, median kU/L (range)	0.96 (0.41-26.1)
Diarrhea Severity recorded, n (%)	13 (87%)
Mild, 0-4 stools per day, n (%)	4 (31%)
Moderate, 5-8 stools per day, n (%)	6 (46%)
Severe, >8 stools per day, n (%)	3 (23%)
Improvement with mammalian avoidance, n (%)	9 (60%)
Treated with PRE, n (%)	11 (73%)
Creon, n (%)	10 (91%)
Zenpep, n (%)	1 (9%)
Allergy Symptoms attributed to PRE	4 (36%)
Urticaria, n (%)	3 (27%)
Diarrhea, n (%)	1 (9%)

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CONCLUSION

In this series of 15 patients with suspected PEI who had concomitant α-gal IgE >0.1 kU/L, 60% improved with removal of α-gal containing products from the diet and 20% did not require PRE. Of the 11 patients who were treated with ongoing PRE, 3 experienced urticaria and 1 had increased diarrhea, but none had severe allergic symptoms.

TAKE AWAY POINTS

- In our experience, patients who are sensitized to α-gal can usually tolerate PRE.
- Practitioners should also be aware that worsening diarrhea during PRE treatment could be a consequence of α-gal-related hypersensitivity, rather than medication non-compliance.
- Recognition of AGS superimposed upon PEI will allow improved management in this complex patient population.

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