

Cyrex Array 4 Case Assignments

(Answers)

CASE #1:

Answer:

Intolerance to tapioca (also known as yuca, cassava, and manioc), which is common in many gluten-free baked goods and is also eaten as a pudding and flatbread. Since tapioca cross-reacts with banana, avocado, chestnuts, and kiwi fruit, he should be advised to try an elimination diet with careful reintroduction of these foods or consider Array 10.

Soy is a very common ingredient in processed foods and is also a common source of lecithin used in many supplements. Some supplements that contain highly purified lecithin from soy may still be acceptable for some patients with a soy intolerance, since the purified lecithin doesn't contain the proteins that are most likely the source of the intolerance. That said, each patient is different, so a careful review of supplements is warranted to exclude any with soy during an elimination phase.

Rice is another commonly used ingredient in many of the gluten-free baked goods and may cross-react with gliadin, corn, soy, and millet.

Egg intolerance can be associated with a hypersensitivity reaction. If he wants to further evaluate this intolerance, Cyrex Array 10 could be considered to screen for intolerance to the egg white versus egg yolk (but it's an expensive test, so it's worth a discussion with the patient). His supplements should also be reviewed, since some may contain compounds derived from egg and should be removed. For example, InterFase Plus, a commonly used biofilm disruptor, contains lysozyme from egg white.

Equivocal antibodies to yeast are particularly notable, given the association with inflammatory bowel disease (IBD), including Crohn's disease and Behçet's disease (an autoinflammatory disorder with the three most common manifestations being oral aphthous ulcers, genital ulcers, and uveitis). These antibodies may cross-react with *Candida albicans* as well as several different bacterial species, normal large intestinal tissue, and gliadin. Thus, further evaluation with Cyrex Array 5; stool testing for fecal lysozyme, lactoferrin, and calprotectin; and intestinal permeability testing may all be considered.

Rx:

- 1) Counsel the patient on "hidden" sources of soy, tapioca, and yeast and recommend an elimination diet. After some treatment and improvement in GI symptoms, careful reintroduction of these foods and/or repeat testing should be considered.

- 2) Consider the following tests:
 - a) Intestinal permeability screen
 - b) Cyrex Array 5
 - c) Stool test to measure fecal lysozyme, lactoferrin, and calprotectin
 - d) Cyrex Array 10 to screen for additional food intolerances and to evaluate egg sensitivity (i.e., white versus yolk)
- 3) Review supplements and provide alternatives for any that contain compounds derived from soy or egg

CASE #2:

Answer:

Significant egg intolerance, which can be associated with a hypersensitivity response. If she wants to further evaluate the intolerance, Cyrex Array 10 could be considered to screen for intolerance to the egg white versus egg yolk (but it's an expensive test, so it's worth a discussion with the patient). Her supplements should also be reviewed, since some may contain compounds derived from egg and should be removed. For example, InterFase Plus, a commonly used biofilm disruptor, contains lysozyme from egg white.

Whey protein intolerance is also noted, and avoidance of most dairy products should be recommended. Given the absence of other sensitivities to dairy (i.e., no antibody response to cow's milk, casein, casomorphin, or milk butyrophilin), she may try an elimination diet with careful reintroduction of higher-fat dairy products, including ghee and cream.

Rx:

- 1) Remove eggs and dairy from the diet completely. Careful reintroduction of high-fat dairy products, including ghee and cream, may be considered.
- 2) Review supplements to ensure none of her current supplements contain compounds derived from egg.
- 3) Offer Cyrex Array 10 to evaluate the egg intolerance as being due to the egg whites or egg yolks.

CASE #3:

Answer:

Antibodies to oats may be associated with her eczema and may also be associated with cross-reactivity with gliadin.

Antibodies to yeast are present, so as discussed for Case #1, further evaluation with Cyrex Array 5; stool testing for fecal lysozyme, lactoferrin, and calprotectin; and intestinal permeability testing may all be considered.

Both millet and sorghum antibodies are present, and these may cross-react (i.e., millet antibodies may cross-react with sorghum and vice versa). Both millet and sorghum are used in a variety of gluten-free baked goods. Millet is another potential contributor to the patient's eczema.

Corn antibodies are equivocal, and these may cross-react with potato and rice. Careful reintroduction of potato and rice should be recommended after an elimination diet.

Rx:

- 1) Removal of all foods in both the equivocal and out-of-range columns.
- 2) Consider additional testing with Cyrex Array 5; stool testing for lysozyme, fecal lactoferrin, and calprotectin; and intestinal permeability testing based on the antibodies to yeast.
- 3) Careful reintroduction of foods after treatment of underlying GI microbial imbalances (if identified), beginning with foods in the equivocal column.