Food Hypersensitivity

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Food Allergy

Now what do I Feed?

Adverse Food Reactions

- Food hypersensitivity
- Food intolerance
- Immunological reactions?
  - Histamine content

Food Hypersensitivity

- Type I, III, IV hypersensitivity
- Clinical onset minutes to days
- Typically protein with molecular weight above 12,000 Daltons
  - This has not been confirmed in the dog!
  - Offending allergen may be smaller

Food allergy

Food allergy

What are the most common offending antigens in dogs?

Jeffers JC. Et al: Responses of dogs with food allergies to single-ingredient dietary provocation. JAVMA 1996

- 25 Food hypersensitive dogs were challenged with 7 ingredients
  - Beef, chicken, chicken egg, cow milk, wheat soy, corn

Jeffers (continued)

- 80% of dogs reacted to one or two items
- 64% reacted to two or more items
- Mean number of reactions was 2.4
- Reports exist for dogs allergic to as many as 9 food items.

Paterson S: Food hypersensitivity in 20 dogs with skin and gastrointestinal signs. J Sm An Practice 1995

- Beef most common reactant (60%) of dogs
- Soy (32%)
- Chicken (28%)
- Milk (28%)
- Corn (25%)

Other potential food allergens

- Fish: 50% of 8 food-allergic dogs (Tapp 1999)
- Rice 9% (Middleton 1993)
- Potato (Small Animal Dermatology 6th ed)
- Gum carrageenan additive (White 1999)

Common Antigens for Cats

- Limited studies available, Most items implicated
  - Chicken, Fish, Dairy products
  - Beef, Pork, Eggs, Lamb

In essence our patient have the capacity to become allergic to any food to which they are exposed!

Food for thought?

- What about cross reactions
  - Beef with other cloven-hoof species?
    - Venison, lamb
  - Chicken with duck?
  - In humans, evidence shows potential cross reactions between aeroallergens and foods.

Food hypersensitivity in dogs

- No age or sex predisposition
  - As many as 50% of food allergic patients may exhibit clinical signs at less than a year of age

Food hypersensitivity in dogs

- Breed predisposition variable.
- Higher in “allergic” breeds
  - Cocker spaniel, Springer spaniel, Labrador retriever, Miniature schnauzer, Shar Pei, West Highland white terriers, Wheaten terriers, German Shepherds, Golden retrievers are all implicated.

Clinical Signs in Dogs

- Dermatitis
  - Pruritus
  - Otitis (including unilateral)
  - Recurring pyoderma
  - Keratinization disorder
  - Urticaria and eosinophilic vasculitis
  - Pyotraumatic dermatitis

Clinical signs in Dogs

- In general signs are non-seasonal
- Could be episodic if due to sporadic treats
- If clinical signs are low (sub-threshold), may be seasonal when exacerbated by atopy flare
- “Ears and Rears”

Clinical Signs

- Gastrointestinal
  - Vomiting
  - Diarrhea
  - Flatulence
  - Frequent BM

Clinical signs

- Reports of seizure
- Respiratory signs
  - Asthma, bronchitis, COPD

Feline food allergy

- No age or sex predisposition
  - White (1989) reported offending allergen fed over two years
- Breed predisposition
  - Siamese and Siamese crosses

Feline food allergy

- Pruritus: especially head
- Self induced alopecia
- Eosinophilic granuloma complex
- Mural folliculitis

Food allergy diagnosis

As of 2009 the only method to accurately identify offending food allergens is with elimination diets and provocative challenging!

Food allergy diagnosis

- Intradermal skin testing
  INACCURATE
- Serology testing
  INACCURATE
- Any questions?

Mueller R. Tsohalis J. Veterinary Dermatology 1998

- Evaluation of serum allergen-specific IgE for the diagnosis of food adverse reactions in the dog

Mueller (continued)

- A monoclonal IgE ELISA was evaluated in food hypersensitive dogs
  - Negative (0%) sensitivity
  - 0% positive predictive value

Three types of diets available for Veterinary dermatology

- Novel protein diets
- Hydrolyzed diets
- Therapeutic diets

Diagnostic Test Diet Options

- Novel Protein and Carbohydrate
- Hydrolyzed diet

Novel protein diets

- Royal canin rabbit, venison, white fish, duck with potato, Vegetarian
- Eukanuba kangaroo/oat, fish/potato
- Hills lamb/egg with rice. Duck/venison with potato
- Purina fish/potato

Novel diets

- Many OTC options with multiple combinations
- Additional diets continue to be developed
- Internet is great help in locating
- Read labels closely

Avoid OTC diets for initial test purpose due to uncertainty of potential for contamination with other non-novel proteins duration manufacturing process.

Hydrolyzed diets

- Royal Canin HP 19
  - hydrolyzed soy, rice, chicken fat.
- Hills Ultra z/d
  - hydrolyzed chicken, corn starch
- Purina HA:
  - hydrolyzed soy, corn starch

Therapeutic diets

- Foods with higher levels of omega 3/6 fatty acids
- Fish is a common protein source
- May be appropriate for patients with atopy and food allergy

Food trial duration

- Questionable
  - Some requires 12 weeks
  - Most cases show clinical improvement by 6 weeks
  - Most flare within 5 days of challenging with offending allergen

So what do I feed now?

- No perfect 100% “fool proof” diet exists!
- In general I prefer a novel protein diet with minimal chance of cross reactions to previously fed proteins.

Choosing a diet likely to be effective for a given patient requires comprehensive history of current and previous diets/treats/supplements

In general I want to avoid diets of hydrolyzed proteins where previous exposure exists

Is hydrolysis of 98% of the protein good enough?

Points to consider when choosing test diet

- Previous diets fed
  - Includes treats (i.e. Milk bones, Greenies)
- Concurrent medical diseases managed with diet
- Supplements
- Chewable medications

Potential Pitfalls during a food trial

- Treats
- Chewable medications
- Gelatin Capsules
- Glucosamine, and vitamin supplements
- Concurrent infections
- Concurrent allergies
- Corn Starch in tablets?

Additional pitfalls during food trial

Children
Disbelievers

Effective food trials require lengthy client education to insure adequate length and proper avoidance of all other potential allergens

Handouts
Technicians

Treatment of Food Allergy

- Avoidance if possible
- Corticosteroids have variable efficacy
- Cyclosporine?
- Many OTC diets available

Concurrent allergies common

- Atopy
  - Recent letter to editor of Veterinary Dermatology Journal suggested 65% of atopic patients had concurrent food allergy
- Parasite hypersensitivity
  - Flea, Scabies, Cheyletiella

Some patients with multiple allergies may require adequate control of atopy before the benefits of a food trial are seen (and vice versa)

Where are you?

Bottom in mid-January