

# Immune-Mediated Polyarthriti

## Basics

### OVERVIEW

- “Erosive” refers to “wearing away” or “eating into”; “immune-mediated” refers to a condition caused by the response of the immune system; “polyarthriti” is the medical term for inflammation of several/many joints
- “Erosive, immune-mediated polyarthriti” is an immune-mediated inflammatory disease of joints that results in wearing away (that is, erosion) of joint cartilage in several joints
- Destruction of bone is evident on x-rays (radiographs) of affected joints

### GENETICS

- Not known to be hereditary

### SIGNALMENT/DESCRIPTION OF PET

#### Species

- Dogs—idiopathic erosive polyarthriti (erosive inflammation of several joints of unknown cause) most common in dogs
- Cats—feline chronic progressive polyarthriti (FCPP is a long-term, progressive inflammation of several joints, characterized by decreased bone density and formation of new bone in the tissue covering the bone [known as the “periosteum”], with collapse of the spaces between bones in the joint)

#### Breed Predispositions

- Small- or toy-breed dogs—more susceptible to idiopathic erosive polyarthriti (erosive inflammation of the joint of unknown cause)
- Idiopathic nonerosive more common in large dogs (German shepherd, Doberman pinscher, retriever, spaniel, pointer), seen in small-breed dogs (toy poodle, Lhasa apso, Yorkshire terrier, Chihuahua), uncommon in cats
- SLE (systemic lupus erythematosus) large-breed dogs more likely (Collie, German shepherd, poodle, terrier, beagle and Shetland sheepdogs are some higher risk breeds)
- Sensitivity to sulfa drugs—arthriti complications more likely in Doberman pinscher
- Polyarthriti-meningiti syndrome reported in Weimaraner, German shorthaired pointer, Boxer, Bernese mountain dog, Beagle, Rottweiler, Japanese Akita
- Amyloidosis and synoviti—young Chinese Shar pei
- Juvenile onset polyarthriti in Akita dogs
- Lymphocytic-plasmacytic synoviti in German shepherds and other large-breed dogs
- Greyhounds—only breed known to be susceptible to erosive polyarthriti of greyhounds

#### Mean Age and Range

- Dogs—young to middle-aged
- Feline chronic progressive polyarthriti (long-term, progressive inflammation of several joints, characterized by decreased bone density and formation of new bone in the tissue covering the bone [periosteum], with collapse of the spaces between bones in the joint)—onset at 1.5–4.5 years of age



## **Predominant Sex**

- Feline chronic progressive polyarthritis (long-term, progressive inflammation of several joints, characterized by decreased bone density and formation of new bone in the tissue covering the bone [periosteum], with collapse of the spaces between bones in the joint)—reported to affect only male cats

## **SIGNS/OBSERVED CHANGES IN THE PET**

- Dogs and cats—sudden or gradual (insidious) onset; single or multiple limb; intermittent shifting-leg lameness and swelling of affected joints; “shifting-leg” lameness is characterized by lameness in one leg, then that leg appears to be normal and another leg is involved
- Cats—may have a more subtle onset of signs than seen in dogs
- Usually no history of trauma
- May also see vomiting, diarrhea, lack of appetite (known as “anorexia”), fever, increased thirst and urinations (known as “polyuria/polydipsia”), depression, and enlarged lymph nodes (known as “lymphadenopathy”)
- Often cyclic—may appear to respond to antibiotic therapy, but may be undergoing spontaneous remission; may develop while the patient is on antibiotics
- Stiffness of gait; lameness; decreased range of motion; grating detected with joint movement (known as “crepitus”); and joint swelling and pain in one or more joints
- Joint instability, partial dislocation (known as a “subluxation”), or dislocation (known as a “luxation”)—depend on duration of disease
- Lameness—mild weight-bearing to more severe non-weight-bearing
- Nonerosive and erosive polyarthritis appear similar in the early stages
- Small joints of the extremities may be more affected but all non-spine limb joints may be affected
- May be associated with other diseases such as prostate infections [(known as “prostatitis”), uterus infections (known as “pyometra), spinal infections (known as “diskospondylitis”)]

## **CAUSES**

- Unknown cause (so-called “idiopathic disease”)
- Immune-mediated mechanism likely
- Long-term (chronic) stimulation of the immune system associated with ongoing nervous system, urinary, dental, heart, reproductive, ear, external skin infections, heartworm disease or digestive tract infections
- Hypersensitivity reaction to drugs (including sulfa drugs, cephalosporins, lincomycin, erythromycin, penicillins)
- Feline leukemia virus (FeLV) and feline syncytium-forming virus (FeSFV)—linked to feline chronic progressive polyarthritis

## **Treatment**

### **HEALTH CARE**

- Usually outpatient
- Physical therapy—range-of-motion exercises, massage, and swimming; may be indicated for severe disease
- Bandages and/or splints—to prevent further breakdown of the joint; may be indicated for severe disease when pet has compromised ability to walk

### **ACTIVITY**

- Limited to minimize aggravation of clinical signs

### **DIET**

- Weight reduction—to decrease stress placed on affected joints

### **SURGERY**

- Healing rates—may be long and protracted; range of recovery levels
- Surgery—generally not recommended as a good treatment option
- Total hip replacement or surgical removal of the femoral head (the “ball”) of the hip joint (procedure known as “femoral head and neck ostectomy” or FHO) may be considered if the hip is the primary problem
- Joint fusion (known as “arthrodesis”) in select cases (such as wrist or “carpus”)
- Indicated if infections of organs; remove infected organ (pyometra for example)

# Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

General considerations:

- The veterinarian will remove the underlying cause if possible (drug stopped, organ removed when chronic infected such as uterus infection (pyometra)
- The veterinarian will try a trial of steroids if not associated with infection; if poor response, the veterinarian will consider combining with other potent medicines such as cytotoxic drugs (cyclophosphamide, azathioprine or 6-mercaptopurine); leflunomide may be added in with other medications
- Aurothiomalate (chrysotherapy) gold salts, may be helpful according to some reports

## IDIOPATHIC POLYARTHRITIS

- Nonsteroidal anti-inflammatory drugs (NSAIDs) in dogs—unrewarding response
- Remission usually induced by combination chemotherapy within 2–16 weeks; will be determined by resolution of clinical signs and confirmation of normal joint-fluid analysis
- The veterinarian will likely discontinue chemotherapy drugs 1–3 months after remission is achieved
- Maintaining remission—alternate-day steroid (prednisone) treatment generally is successful

## EROSIVE POLYARTHRITIS OF GREYHOUNDS

- Treatment is unrewarding
- Antibiotics, nonsteroidal anti-inflammatory drugs, steroids, cytotoxic drugs, and medications intended to slow the progression of arthritic changes and protect joint cartilage (known as “chondroprotective drugs”), such as polysulfated glycosaminoglycans—fail to induce remission

## FELINE CHRONIC PROGRESSIVE POLYARTHRITIS

- Treatment may help slow progression
- Combination of steroids (prednisone) and chemotherapy drug (cyclophosphamide)—typically used

# Follow-Up Care

## PATIENT MONITORING

- Treatment often is frustrating and requires frequent reevaluation
- Clinical deterioration—requires a change in drug selection or dosage or change in treatment
- Important to try to induce remission; allowing the disease to smolder uncontrolled will increase risk of secondary degenerative joint disease (progressive and permanent deterioration of joint cartilage)

## EXPECTED COURSE AND PROGNOSIS

- Erosive form: Progression is likely; cure is not expected; remission is the goal of treatment
- SLE and FCPP—progression common, guarded prognosis
- Other forms—good prognosis
- Remission usually in 2–16 weeks; confirmed with assessment of joint fluid and resolved signs
- Recurrence rate is 30–50% once treatment is discontinued

# Key Points

- Treatment often is frustrating and requires frequent reevaluation
- Poor prognosis for cure and complete resolution
- Progression is likely
- Cure is not expected; remission is the goal of treatment