

# NON-EROSIVE, IMMUNE-MEDIATED POLYARTHRITIS

## BASICS

### OVERVIEW

- “Erosive” refers to “wearing away” or “eating into;” “non-erosive” refers to the absence of lesions characterized as “wearing away” or “eating into;” “immune-mediated” refers to a condition caused by the response of the immune system; “polyarthritis” is the medical term for inflammation of several joints
- “Non-erosive, immune-mediated polyarthritis” is an immune-mediated inflammatory disease of joints that *does not* cause wearing away (that is, erosion); includes several identified diseases, such as idiopathic polyarthritis, systemic lupus erythematosus (SLE), polyarthritis associated with long-term (chronic) disease (such as chronic infections or cancer), polyarthritis-polymyositis syndrome, polymyositis syndrome, polyarthritis-meningitis syndrome, polyarthritis nodosa, familial renal amyloidosis in Chinese shar peis, lymphocytic-plasmacytic synovitis, juvenile-onset polyarthritis of Akitas, and the proliferative form of feline chronic progressive polyarthritis

### GENETICS

- Not known to be inherited

### SIGNALMENT/DESCRIPTION of ANIMAL

#### Species

- Dogs and cats

#### Breed Predispositions

- Non-erosive, immune-mediated polyarthritis of unknown cause (so called “idiopathic non-erosive, immune-mediated polyarthritis”)—large- (more common) and small-breed dogs; uncommon in cats; seen in German shepherd dogs, Doberman pinschers, retrievers, spaniels, pointers, toy poodles, Lhasa apsos, Yorkshire terriers, and Chihuahuas more frequently than expected compared to other breeds
- Systemic lupus erythematosus (“SLE;” autoimmune disease in which the body attacks its own skin and other organs)—tendency to affect large-breed dogs; collies, German shepherd dogs, poodles, terriers, beagles, and Shetland sheepdogs
- Secondary to administration of sulfa drugs—increased sensitivity in Doberman pinschers
- Polyarthritis-meningitis syndrome (inflammation of several joints [polyarthritis] and inflammation of the membranes covering the brain and spinal cord [known as “meningitis”])—reported in Weimaraners, German shorthaired pointers, boxers, Bernese mountain dogs, beagles, rottweilers, and Akitas
- Amyloidosis (condition in which insoluble proteins [amyloid] are deposited outside the cells in various organs, compromising their normal function) and synovitis (inflammation of the membrane lining the joint)—prominent features of a syndrome affecting young Chinese shar peis
- Juvenile-onset polyarthritis reported in Akitas
- Lymphocytic-plasmacytic synovitis in German shepherd dogs and other large-breed dogs; inflammation of the lining of the joint (synovitis), characterized by the presence of lymphocytes and plasma cells; lymphocytes are a type of white-blood cell that are formed in lymphatic tissues throughout the body; lymphocytes are involved in the immune process; plasma cells or plasmacytes are a specialized type of white-blood cell; plasma cells are lymphocytes that have been altered to produce immunoglobulin, an immune protein or antibody necessary for fighting disease

#### Mean Age and Range

- Dogs—young to middle-aged

#### 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 [known as the “periosteum”], with collapse of the spaces between bones in the joint)—male cats only

### SIGNS/OBSERVED CHANGES in the ANIMAL

- Sudden (acute) onset; single- or multiple-limb lameness
- Stiffness of gait; decreased range of motion; grating detected with joint movement (known as “crepitus”); and joint swelling and pain in one or more joints
- Mild weightbearing to more severe, non-weightbearing lameness
- Lameness may shift from leg to leg
- Usually no history of trauma
- May see vomiting, diarrhea, lack of appetite (known as “anorexia”), fever, increased urination (known as “polyuria”), or increased thirst (known as “polydipsia”)
- Signs associated with generalized (systemic) disease or infections (such as infection/inflammation with accumulation of pus in the uterus [known as “pyometra”], infection/inflammation of the prostate [known as “prostatitis”], or bacterial or fungal infection of the intervertebral disks and adjacent bone of the spine [known as “diskospondylitis”]), or cancer
- Often cyclic signs—may appear to respond to antibiotic therapy, but may be undergoing spontaneous remission

- Disease may develop when patient is being treated with sulfur-containing antibiotics

### CAUSES

- Unknown for most cases
- Immune-mediated mechanism likely
- Long-term (chronic)—associated with coexistent diseases, such as inflammation of the membranes covering the brain and spinal cord (meningitis), gastrointestinal disease, cancer, urinary tract infection, inflammation of the tissues around and supporting the tooth (known as “periodontitis”), bacterial inflammation of the lining of the heart (known as “endocarditis”), heartworm disease, infection/inflammation with accumulation of pus in the uterus (pyometra), long-term (chronic) infection/inflammation of the middle ear (known as “otitis media”) or of the outer ear (known as “otitis externa”), fungal infections, and long-term (chronic) *Actinomyces* or *Salmonella* infections
- May occur as a side effect of medication in which joint inflammation is secondary to a hypersensitivity reaction to the drug; suspected antibiotics include sulfas, cephalosporins, lincomycin, erythromycin, and penicillins
- Feline leukemia virus (FeLV) and feline syncytium-forming virus (FeSFV)—linked to 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)

### TREATMENT

#### HEALTH CARE

- Usually outpatient
- Physical therapy—range-of-motion exercises 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

- Remove source of infection (such as surgical removal of the uterus in cases with infection/inflammation of the uterus [pyometra]), where applicable—no other therapy may be needed in these cases

### 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.

- Eliminate underlying causes, if possible—long-term (chronic) disease; discontinue treatment with antibiotics that may lead to polyarthritis
- Typical therapy—initial trial of steroids (such as prednisone); if poor response, then add chemotherapy (such as cyclophosphamide or a thiopurine [azathioprine or 6-mercaptopurine])
- Leflunomide—used to decrease inflammation; may be used in combination with azathioprine, prednisone, and cyclophosphamide
- Maintaining remission—alternate-day steroid therapy (such as prednisone) is generally successful
- 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)—treatment with prednisone and cyclophosphamide may slow progression of disease

### FOLLOW-UP CARE

#### PATIENT MONITORING

- Clinical deterioration—indicates need for a change in drug selection or dosage

#### EXPECTED COURSE AND PROGNOSIS

- Complete remission—usually achieved in 2 to 16 weeks; determined by resolution of clinical signs and confirmation of normal joint-fluid analysis
- Recurrence rate—30% to 50% once therapy is discontinued
- Systemic lupus erythematosus (SLE) and feline chronic progressive polyarthritis—progression common; guarded prognosis
- Poor prognosis for cure and complete resolution, if a primary cause is not found

## KEY POINTS

- Poor prognosis for cure and complete resolution, if a primary cause (such as a long-term [chronic] infection) is not found and treated successfully

