

Vector Transmitted Infections (VTI' s) Insights and Challenges

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FrogOtter Swimming



Aqueous All Wheel Drive!

Cape Breton



Vector Transmitted Infections

- ◆ Malaria, West Nile, Yellow fever, Typhus, Rocky Mountain Spotted Fever
- ◆ Lyme Disease (Borreliosis)
- ◆ Bartonellosis
- ◆ Babesiosis
- ◆ Erlichiosis , Anaplasmosis
- ◆ Viruses

Affects of Climate Change

- ◆ Migratory birds
- ◆ Geese
- ◆ Less winter die off of insects
- ◆ Increased access to hosts (mice, other rodents, deer)
- ◆ Increased outdoor human activities

Diagnostic Difficulties

- ◆ Vector Insects: ticks, mites, fleas, flies, mosquitoes
- ◆ Insufficient awareness public/physicians
- ◆ Delayed treatment
- ◆ Inadequate testing of vectors/humans

British Columbia Confidential Internal Report May 2010

- ◆ Released through freedom of information request April 2011
- ◆ “the majority of GP’ s lack knowledge about Lyme Disease”
- ◆ “the current state of diagnostic methods for chronic Lyme and other related infections is inadequate”

Increasing my knowledge

- ◆ Presentation by Dr. Richard Dubocq, Maine at The Wellness Centre 2008
- ◆ Discussions with Dr. E. Murakami, BC
- ◆ Dr. J. Burrascano's Advanced Topics in Lyme Disease
- ◆ Dr. K.Singleton's The Lyme Disease Solution
- ◆ Dr. S. Buhner's Healing Lyme
- ◆ Discussion with other treating physicians
- ◆ ACAM Workshop April 2010
- ◆ ILADS Conference October 2010, 2011
- ◆ Assessing/treating patients, more reading

Early Signs of Infection

- ◆ Possible/known bite (tick/flea/mosquito,etc)
- ◆ Early signs
 - ◆ Rash
 - ◆ Fever
 - ◆ Headaches
 - ◆ Joint pain
 - ◆ Fatigue

Lyme Disease/Borreliosis

Acquisition

- ◆ Tick Bite
 - ◆ often unnoticed
- ◆ Rash
 - ◆ Erythema Migrans; 50% don't have one
- ◆ Exposure
 - ◆ outdoor activity; endemic areas

Lyme Disease/Borreliosis (cont'd)

Stages

- ◆ Early Local
 - ◆ Flu-like symptoms
- ◆ Early Disseminated
 - ◆ General – sweats, weakness, fatigue, rash
 - ◆ MS – migrating pain muscles, tendons, joints
 - ◆ Cardiac – heart palpitations, chest pain on exertion
 - ◆ Neuro
 - ◆ Muscle tone loss (face)
 - ◆ Mild meningitis: headache, neck stiffness, light sensitivity
 - ◆ Neuritis: shooting pains, skin sensations
 - ◆ Mild encephalitis: memory loss, mood changes

Lyme Disease/Borreliosis (cont'd)

Stages (cont'd)

- ◆ Late Persistent
 - ◆ Early disseminated worsens plus shooting pains
 - ◆ Severe fatigue, weight loss

- ◆ Lyme Encephalopathy
 - ◆ Poor concentration, poor memory, brain fog
 - ◆ Difficulty finding correct words, slurred speech
 - ◆ Awkward gait/foot dragging
 - ◆ Urinary incontinence
 - ◆ Loss of balance, tremors
 - ◆ Emotional lability

Bartonellosis

- ◆ Caused by Bartonella, a gram negative intracellular bacteria; 8 species infect humans; mostly henselae and quintana

- ◆ Common in cats and dogs

- ◆ Acute
 - ◆ Streaky red rash with possible itching/burning
 - ◆ Fever, malaise
 - ◆ Headache, regional lymphadenopathy
 - ◆ Sore throat, especially in morning

- ◆ Chronic
 - ◆ Fatigue
 - ◆ Sleep disturbance
 - ◆ Afternoon/evening sweats
 - ◆ Brain fog
 - ◆ Various headaches
 - ◆ Pain/pressure behind eyes
 - ◆ Recurrent pharyngitis, sinusitis and/or conjunctivitis
 - ◆ Tinnitus, decreased hearing

Bartonellosis

Chronic Cont' d

- ♦ Jaw pain
- ♦ Easy bruising
- ♦ Lower costal margin pain
- ♦ Low back pain
- ♦ Painful soles in am
- ♦ Muscle twitching/tremors/weakness
- ♦ Painful muscles
- ♦ Sensitivity to touch
- ♦ Stiff/painful neck
- ♦ Scalp tenderness and/or crusty lesions
- ♦ Generalized itching/crawling under skin
- ♦ Tender subcutaneous nodes

Bartonellosis

Chronic Cont' d

- ♦ Nausea, abdominal pain and bloating
- ♦ Poor balance
- ♦ Blurred vision, light sensitivity
- ♦ Pain in tendons previously injured
- ♦ Recurrent streaky red rashes
- ♦ Cyanosis in extremities
- ♦ Tachycardia
- ♦ Small, asymmetric joint pain
- ♦ Anxiety, irritability, antisocial, rages, mood disorders
- ♦ Overly emotional reactions
- ♦ Dry cough

Babesiosis

- ♦ Caused by Babesia, a protozoan parasite; 14 species; microti most common in humans; hemolytic
- ♦ **Acute**
 - ♦ Sudden onset
 - ♦ Drenching day/night sweats
 - ♦ Severe headache (pressure type)
 - ♦ Severe fatigue
 - ♦ Disoriented
- ♦ **Chronic**
 - ♦ Fatigue
 - ♦ Night sweats/chills
 - ♦ Persistent headaches(vice like)
 - ♦ Brain fog
 - ♦ Little body pain except wrist/hands/feet/ankles

Babesiosis

- ♦ **Chronic Cont' d**
 - ♦ Cardiac dysrhythmia
 - ♦ Easing bruising, flushing
 - ♦ Fear, depression
 - ♦ Getting lost in familiar places
 - ♦ Thirst
 - ♦ Air hunger
 - ♦ Dizziness, tippiness
 - ♦ Symptoms cycle +/- 5 days

Erlichiosis/Anaplasmosis

Caused by intracellular bacteria *Ehrlichia*/*Anaplasma*

Acute

Symptoms 1-2 weeks after infection

- ♦ Fever, chills, myalgia, malaise, N/V
- ♦ Rash: petechial, sunburn like (60% children, 30% adults)
- ♦ Headaches (sharp, knife-like, behind eyes)

Chronic

- ♦ Neurologic symptoms (tingling, buzzing, burning, shooting) arms and legs
- ♦ Mild brain symptoms (mood, cognition)
- ♦ Muscle pain
- ♦ Low WBC

DNA Viruses /HHV-6/ EBV/ CMV

- ♦ Fatigue
- ♦ Sore throat
- ♦ Lymphadenopathy