

## LYME DISEASE AND ASSOCIATED ILLNESS

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### Disclaimer

This presentation is not intended to serve as individual medical advice. All statements made are general in nature and should be discussed with a licensed healthcare practitioner.

### Outline

- Facts about Lyme disease
  - Vector Borne Illness
  - Lab testing
  - Co-infections
  - Other considerations
- Treatment: Standard treatment
- Treatment: Alternative treatments
- Importance of:  
Nutrition/Elimination/Exercise/Sleep
- Patient's responsibility

### Vector-Borne Diseases a national problem

- Transmitted to humans by ticks, mosquitoes and fleas
- Control is complex because it is difficult to predict the habits of the vectors
- The vectors can infect animals both domestic and wild
- Increasing as people build homes in formerly uninhabited wilderness

### Understanding Tick-borne Diseases

Tick-borne diseases can include viruses, bacteria, or parasites

- Ticks transmit Lyme disease
- Ticks transmit Ehrlichiosis and Anaplasmosis
- Ticks transmit Rocky Mountain spotted fever
- Ticks transmit Babesiosis
- Ticks transmit Bartonella
- Ticks transmit Tularemia
- Ticks transmit Q fever

### Complicating Factors

- Lyme disease is one of the most immunosuppressive infectious diseases
- It can alter its genetic material to confound the immune system and thereby evade an immune system response.
- Difficult to diagnose clinically: the great imitator

### Complicating Factors

- Co-existing multiple co-infections
- Any effective Lyme treatment protocol must address the co-infection(s) as well as Lyme
- Treatment is dependent on other factors

### Definitions

**Antigen (Ag)**- any substance (toxin, bacteria) recognized by the immune system as foreign

**Antibody – (Ab)** also known as an immunoglobulin (abbreviated Ig);  
Abs are produced by the body in response to an antigen, to neutralize the Ag, to render the Ag harmless

### Lab Testing for Lyme Disease

- The number of each band refers to the weight of the antibody protein, kilodaltons (kDa)
- There are nine known [Lyme] Borrelia burgdorferi genus species-specific (kDa) antibodies
- 18kDa, 23kDa, 31kDa, 34kDa, 37kDa, 39kDa, 83kDa, 93kDa
- Identified by \*\* on the IGENEX LAB test

### Lab Testing for Lyme Disease

- CDC Western Blot IgG surveillance criteria **excludes bands 31, 34 and 83**
- It does not make sense to exclude any Borrelia Burgdorferi (Bb) genus species-specific antibodies in a Lyme Western Blot
- A persisting infection can drive a IgM reaction

### Lab Testing for Lyme Disease

- One species specific band can confirm a clinical diagnosis of Lyme disease

### Lab Testing for Lyme Disease

If on antibiotics for one month or more check a monthly

- liver function (LFT)
  - SGOT/ALT
  - SGPT/APT
- complete blood count (CBC)
  - Hct/Hgb/WBC/platelets

If on antibiotics for more than three months; check every 3mos

- check kidney function (BUN/Cr/GFR)

**Lyme Controversy**

**ILADS** - International Lyme Disease and Associated Diseases Society

**IDSA** - Infectious Disease Society of America

**Considerations**

**1.- Infections/co-infections**

Bacterial:

- Lyme/Borreliosis
- Ehrlichiosis
- Bartonella
- Rocky Mountain Spotted Fever
- Mycoplasma

**Considerations**

**1.- Other Infections/co-infections**

Parasites:

- Babesiosis

Fungi:

- Candida

Viruses:

- EBV, HHV-6

**Considerations**

**2.- Immune Dysfunction/ Inflammation**

**Considerations**

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**3.- Toxicity**

**Considerations**

2.- Immune Dysfunction/ Inflammation

3.- Toxicity

**4.- Allergies/Sensitivities: Foods, Environmental**

### Considerations

- 2.- Immune Dysfunction/ Inflammation
- 3.- Toxicity
- 4.- Allergies/Sensitivities: Foods, Environmental
- 5.- Nutritional and Enzyme Deficiencies**

### Considerations

- 2.- Immune Dysfunction/ Inflammation
- 3.- Toxicity
- 4.- Allergies/Sensitivities: Foods, Environmental
- 5.- Nutritional and Enzyme Deficiencies
- 6.- Sleep Disturbances**

### Infections

- Lyme/Borreliosis
- Ehrlichiosis
- Bartonella
- Rocky Mountain Spotted Fever
- Mycoplasma
- Babesiosis

### Symptoms of Lyme Disease

- Flu-like symptoms
- Fatigue
- Headaches
- Migratory joint pains
- Migratory muscle pains
- Muscle Twitches/Spasms
- Neck pain
- Abdominal pain
- Chest/Rib pain
- Insomnia
- Hypersomnia
- Sore Throats with adenopathy
- Urinary symptoms
- Recurrent skin rashes
- Cognitive disruption
- Neuropathy/Paresthesia
- Emotional issues

### ANTIBIOTICS for Lyme

- Doxycycline- Adults: 100 mg bid with food;
- Amoxicillin - Adults: 1g q8h plus probenecid 500mg q8h
- Omnicef -Adults: 500mg bid with food
- Azithromycin - Adults: 500 to 1200 mg/d
- Benzathine penicillin (Bicillin LA) - Adults: 1.2 million U- three to four doses weekly

### Lyme disease/Borreliosis

- Cell Wall penetration
  - Penicillins, Cephalosporins, Clindamycin
- Intracellular penetration
  - Macrolides, Tetracyclines, Quinolones
- Cystic penetration
  - Flagyl, Tindamax, GSE

### ANTIBIOTICS for Bartonella/BLO

- Levaquin – Adults: 500 mg daily (may be adjusted based on body weight)
- Rifampin -Adults: 600mg qd
- Bactrim DS – Adults: 500mg twice daily

### ANTIBIOTICS for Babesia

- Mepron - Adults: 2 teaspoons twice daily plus Azithromycin 250mg twice daily
- Malarone –Adults: one tab twice daily
- Coartem - Adults: 4 tabs twice daily for 3 consecutive days
- Artemisinin – one twice daily

### Understanding the role of Laboratory Testing in Lyme Disease

- If on antibiotics for one month or more check a monthly
  - liver function (LFT)  
SGOT/ALT  
SGPT/APT
  - complete blood count (CBC)  
Hct/Hgb/WBC & differential/platelets
- If on antibiotics for more than three months; check renal function every 3mos
  - kidney function (BUN/Cr/GFR)

### Supplementation (Required)

PROBIOTICS  
SACCHAROMYCES BOULARDI  
MULTI-VITAMIN  
ANTIOXIDANT  
ESSENTIAL FATTY ACIDS

### Supplementation (OTHER)

GLUCOSAMINE/CHONDROITIN SULFATE  
VITAMIN C, B-12, MAGNESIUM,.....  
MILK THISTLE

### Alternative Therapies

Homeostasis  
Bioregulatory Medicine  
Homotoxicology/Homeopathy

## Homeostasis

Regulation of the body's internal environment in order to maintain a stable condition

## Bioregulatory Medicine

- A different medical paradigm
- Shifts the emphasis from diagnosing and treating diseases, towards facilitation of Homeostasis
- Restores and facilitates our innate ability for self-healing

Introduction to Bioregulatory Medicine (Complementary Medicine)  
by Alta Smith MD

## Bioregulatory Medicine

- Facilitates an open and nonlinear flow of bio-information capable of counteracting dysregulatory factors and activating self-corrective mechanisms reestablishing Homeostasis

Introduction to Bioregulatory Medicine (Complementary Medicine)  
by Alta Smith MD

## Bioregulatory Medicine

- Employs a variety of natural modalities and techniques
  - ✓ Nutrition
  - ✓ Psychotherapy
  - ✓ Acupuncture
  - ✓ Osteopathy
  - ✓ Homeopathy
  - ✓ Biopuncture

## Bioregulatory Medicine

The individual Bioregulatory treatment strategy greatly varies according to existing imbalances and bio-individuality, where each treatment is based on therapeutic methodologies that are the most indicated for homeostatic re-balance for an Individual

## Homotoxicology

Homo = Human  
Toxic = Toxins  
-ology = the study of

### Homotoxicology

Analysis of sickness within the framework of the body's failure to deal with the burden of toxins in the body

### Homotoxicology/Homeopathy

Homeopathic remedies often are used as treatment.

### Homotoxicology/Homeopathy

Homeopathy is a system of medicines that elicit a curative effect when given in very dilute quantities. Homeopathic remedies are believed to stimulate the body's own healing processes.

### MOST IMPORTANT A Patient's Responsibility

- Pay attention to lifestyle habits
- Nutrition
- Sleep
- Exercise
- Elimination

The GUT is important!

Proper GUT function:

Can reduce the overall toxic load

**KEY POINTS ABOUT THE GUT**

- **The Digestive System is a Major Immune system organ**

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- The Digestive System is a Major Immune system organ
- A large percentage of the immune system (the defense system) takes place in the Gut Lymphoid Tissue
- **The lymphocytes in the GUT are triggered by toxic substances**

**Toxic**

<b>NUTRITION</b>	<b>EXERCISE</b>
<ul style="list-style-type: none"> <li>• Junk food</li> <li>• Sweets</li> <li>• Smoking</li> <li>• Drugs</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> <li>• Sedentary Lifestyle</li> <li>• No consistency</li> </ul>

**Alternatives**

<b>NUTRITION</b>	<b>ELIMINATION</b>
<ul style="list-style-type: none"> <li>• WATER</li> <li>• JUICES DILUTED WITH WATER</li> <li>• NO ARTIFICIAL SWEETNERS</li> </ul>	<ul style="list-style-type: none"> <li>• Correct CONSTIPATION</li> <li>• Prevent DIARRHEA</li> <li>• Correct INCONSISTENCY</li> </ul>

**MOST IMPORTANT**

- Pay attention to lifestyle habits
- Nutrition
- Sleep
- Exercise
- Elimination



**Important to remember**

- Too aggressive a treatment can cause a download of toxins that the patient does not have the energy to resolve

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- Too aggressive a treatment can cause a download of toxins that the patient does not have the energy to resolve
- Strong detoxification cannot be done in a highly devitalized patient

**Important to remember**

- Be sensitive to how much vital energy the patient has available

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- Be sensitive to how much vital energy the patient has available
- Safe to start by building up the patient's energy and begin slowly with medication protocols

**Important for you to know  
A Patient's Responsibility**

- It is important for you to know as much as possible about your illness and treatment
- Your doctor is a partner in your recovery, but you are in charge of your health
- If possible, take someone with you to your appointments
- If possible, have a friend(s) to assist
- Know what your treatment plan is, and be in agreement with your doctor

**Treatment can depend on:**

- The state of the biological terrain
- The patient's relative vitality or depletion
- The patient's lifestyle habits

### Helpful thoughts A Patient's Responsibility

- Keep a daily log of your symptoms
- Note medications/supplements
- Keep copies of your tests

### A Patient's Responsibility

- Bring your list of medications/  
supplements to the medical office
- Be sure to include brand name, dosage,  
and times of day taken
- If applicable, take a copy of your daily  
log and nutrition list to the medical office

“Virtually all human diseases result from the interaction of genetic susceptibility factors and modifiable environmental factors, broadly defined to include infections, chemical, physical, nutritional, and behavioral factors.”

**Office of Genetics and Disease Prevention, CDC**

End of Slides