Kryptopyrroluria (aka Hemopyrrollactamuria): A Major Piece of the Puzzle in Overcoming Chronic Lyme Disease

by Scott Forssgren

Dr. Djirich Klinghardt
MD, PhD is a practicing physician with a focus on the treatment of chronic neurological conditions such as Lyme disease, autism, and CFS/Ds. In the many years that he has treated patients with chronic infections, he has observed that, for many, recovery is elusive. Patients may often plateau or find that their recovery is stalled. In other cases, patients may not succeed in their attempts to rid the body of a particular toxin or infectious burden; such as in patients with long-standing or therapy-resist- ant late stage Lyme disease.

In looking for possible explanations to why some patients struggle more than others to regain their health, Dr. Klinghardt has found a high correlation between patients with chronic Lyme dis- ease and those with Kryptopyrroluria (KPU), or more precisely Hemopyrrollactamuria (HPU). The HPU complex is a biochemical marker and neuro- toxic substance frequently identified in the urine of patients with autism, learning disabilities, alopecia, substi- tance abuse, schizophrenia, ADHD, Down syndrome, depression, bipolar disorders, and even criminal behavior.

Some estimate the incidence of KPU to be 40-70% in schizo- phrenia; 50% in autism; 30% in ADHD; and 40-48% in alo-pecia and substance abuse. Dr. Klinghardt has found the incidence of HPU in Lyme disease to be 80% or higher; in patients with heavy metal toxicity (lead, mercury, cadmium, and others) over 75%; and in children with autism over 80%. These are very significant percentages of the patient population with chronic disease who may benefit from a treatment program which addresses HPU.

Normal, healthy controls do not test positive for HPU.

History

In 1958, a psychiatric research program in Saskatchewan, Canada led by Abram Hoffer MD, PhD, the father of orthomolecular psychiatry, was looking for the possible biochemical origin of schizophrenia. One study involved evaluating the urine for certain chemical fractions and evaluating those of schizo- phrenic patients and those of normal controls. The effort yielded the “mauve factor” – a specific substance that reliably allowed the examiners to iden- tify the schizophrenic patients, as it was not identified in the normal controls.

Early on, the substance was known as “the mauve fac- tor” due to the mauve color that was observed on the stained paper. It was then termed “kryptopyrrole”, later identified as hydroxy-hemopy- rollac-ton-2-one (HPL). The researchers first called the dis- ease associated with this condi- tion “Malvaria”, but it was renamed by Dr. Carl Pfeiffer MD, PhD to “Pyruloria” which was, for no good reason, consistently spelled “Pyrulouria” in later publica- tions. In the 1970’s, Dr. Pfeiffer created an essay for the condition and was able to show clinical improvement in posi- tive patients with high doses of zinc and vitamin B6.

Overview

Elevated levels of HPL found in urine are the result of an abnormality in heme synth- etase. Hemoglobin is the sub- stance the holds iron in the red blood cells. HPL is a byprod- uct of hemoglobin - or heme- synthesis and can be identified in the urine. HPL binds to zinc, biotin, manganese, vita- min B6, arachidonic acid and other important compounds and lead to a significant deple- tion of these substances in the body.

Turning to the impor- tance of zinc, biotin, man- ganese, vitamin B6, and arach- idonic acid in the body, it becomes clear how widespread the problem may be that is cre- ated by this condition.

Zinc deficiency may result in emotional disorders, delayed puberty, rough skin, delayed wound healing, growth retardation, hypopia, hypochromia, mental lethar- gy, short stature, diarrhea, stretch marks or striae (which may be misinterpreted as Bartsella in some patients), white spots on the fingernails, reduction in collagen, macular degeneration, dandruff, skin lesions such as acne, hyperac- tivity, loss of appetite, reduced fertility, transverse lines on the fingernails, definitive mineral- ization of bone leading to osteoporosis and many others.

Zinc is a powerful anti- oxidant and lower levels of zinc, as found in those with HPU, lead to an increase in oxidative stress. Lower levels of zinc are correlated with low levels of glutathione, an impor- tant part of the detoxification system. Zinc is required to support proper immune func- tion. “White blood cells with- out zinc are like an army with- out bullets,” says Dr. Klinghardt.

Biotin deficiency may be evidenced by rashes, dry skin, seborrheic dermatitis, brittle nails, fine or brittle hair, and hair loss. More important- ly, however, it may be associat- ed with depression, lethargy, hearing loss, fungal infections, muscle pain, and abnormal skin sensations such as tingling. Biotin is an important factor in the production of energy in the mitochondria. Biotin is essen- tial for a healthy brain and nervous system. Biotin defi- ciency is associated with many aspects of the aging process.

Manganese deficiency may be associated with joint pain, inflammation, and arthri- tis. It may result in a change in hair pigment or a slowing of hair growth. It is essential for normal growth, glucose utiliza- tion, lipid metabolism, and pro- tection of thyroid hormone. It may be associated with dis- eases such as diabetes, Parkinson’s disease, osteoporo- sis, and epilepsy.

Vitamin B6 deficiency is thought to be a rare occur- rence. However, in those with HPU, this is not the case. B6 deficiency may lead to nerv- ousness, insomnia, irritability, muscle weakness, poor absorp- tion of nutrients, decrease of key enzymes and cofactors involved in amino acid metabo- lism, impairment in the syn- thesis of neurotransmitters, impairment in the synthesis of hemoglobin, seborrhoeic der- matological eruptions, confu- sion, and neuropathy. Similar to zinc, B6 is also an anti-oxi- "Overcoming... cont’d pg. 3"
In February the Connecticut Medical Examining Board (CMEB) voted to discipline Dr. Charles Ray Jones, the 80-year-old pediatrician fea-
tured in UNDER OUR SKIN, for failing to report a tick bite and a physician-
derived Lyme disease. The medical board’s final decision, which will be
signed in March, specifies that Jones pay a $10,000 fine and
finance four years of supervised probation by a licensed pediatri-
cian. This is on top of another
$10,000 fine and two years of probation specified in a 2007
ruling, which is currently in appeal.

Jones supports ques-
tion the fairness of the proceed-
jings against this pediatric Lyme specialist, who has treated more
than 10,000 children with tick-
borne diseases over the course of
his career. Dr. Jones’ lawyer,
Elliott Pollack, believes that the
undue harshness of the sentence is related to the heated contro-
versy surrounding his use of
long-term antibiotics in treating children with persistent Lyme
disease.

The medical board, on the other hand, says that the
most recent charges are not
related to Lyme disease. The
panel chairman, Dr. Richard
Bridburg, elaborated: “For us, at
least, this issue was perhaps
because of the size and busy-
ness of Dr. Jones’ practice; we
thought that he takes shortcuts.”
(Source: Hartford Courant)

A new deluge of charges that Dr. Jones took “short cuts,”
a review of all CT Physician Disciplinary Action cases un-
der the CT medical board raises questions about fairness of his punishment for these pro-
cedural issues.

Last year the medical board found 43 physicians for serious charges such as sub-
stance abuse, sexual misconduct,
drug use, and neglect; none of these physi-
cians received a fine larger than
$5,000. And only one other physician, accused of drug abuse, received a longer sup-
ervised probation period than Dr. Jones – though this drug-addict doctor did not receive the addi-
tional $20,000 in fines levied on Dr. Jones.

None of Dr. Jones’ treat-
ments resulted in patient harm and his medical decisions were not under his 
practice to begin the treatment of these very sick children as soon as possible. The cases under investigation were:

Case I: Dr. Jones ordered blood tests for a child who had received no antibiotics based on a phone interview with the child’s grandmother.

Case 2: Dr. Jones pre-
scribed anticoagulants to a child with a phone for a child who had received no antibiotics.

A serious tick-borne disease simi-
lar to malaria, before a physical
exam. This was after interview-
ing the mother and a referring health care provider, and learn-
ing that the child had a history
of a tick bite and a physician-
observed Lyme rash.

Irrespective of whether the punishment fits the “crime,” the medical board’s six-year investigation into Dr. Jones has seen a headline-grabbing mes-
tage to every pediatrician in Connecticut – if you treat children with Lyme disease with
more than four weeks of antibi-
otics, you may lose your med-
cal license and be treated as a
pariah among your peers. So,
with Connecticut Lyme cases skyrocketing up 118% from
2006 to 2008, and the state des-
perately needing every Lyme specialist it can get, the children of Connecticut are the ones risking their health in order to get the treatment of these very sick children as soon as possible.

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Public Health Alert

The PHA is committed to research-
ning and investigating Lyme Disease and other chronic illnesses in the United
States. We have joined our forces with local and nationwide support group leaders. These groups include the Lyme Disease (Illinois), Multiple Sclerosis, Lou Gehrig’s Disease (ALS), Lupus, Chronic Fatigue, Fibromyalgia, Heart Disease, Cancer and various other illnesses of unknown origin.

PHA seeks to bring information and awareness of these illnesses to the public’s attention. We seek to break even that anyone struggling with these diseases has proper sup-
port emotionally, physically, spiritu-
ally and medically.

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**Overcoming**...cont'd from pg 1

dant and correlates to levels of glutathione.

Arachidonic acid (from omega-6 deficiency) may lead to the impairment of white blood cell function, primarily the leukocytes which are believed to lead to one being more vulnerable to infection. It may lead to neuropsychiatric and personality disorders in severe cases, as well as arthritis, dry eyes, growth retardation, dry skin and hair, slow wound healing, hair loss, kidney dysfunction, heart beat abnormalities, and miscarriages.

When one considers the magnitude of potential health problems that may be present when a single condition causes a deficiency in zinc, magnesium, vitamin B6, and arachidonic acid simultaneously, the effective treatment protocols on health are almost endless.

**HPU and Lyme Disease**

Three possible origins of HPUs are discussed in the literature: genetics, early childhood trauma, and chronic infection. The relationship between HPUs and many of the illnesses previously discussed has been kept secret for quite some time. Never before has a connection been observed or published between HPUs and Lyme disease. This discovery has been a key for Dr. Klinghardt to return to his patients to a better state of health and wellness. The changes he has observed have been profound.

Dr. Klinghardt has found that 4 of 5 patients with chronic Lyme disease test highly positive for this condition. The 4 of 5 patients have symptoms of chronic Lyme disease might benefit from a treatment protocol that addresses HPUs.

Dr. Klinghardt believes that it is not possible to have chronic symptomatic Lyme disease as an adult without a preceding infection of the patient having developed HPU. He postulates that the biotoxins from microbes and perhaps one or more of the eight enzymes of heme synthesis is present. This leads to a significant number of key minerals in white blood cells which effectively disarms cellular immunity.

One young adult female struggling with Lyme for several years had severe multiple chemical sensitivities (MCS) that were not improved by any previous treatment. After starting the HPU protocol, she noticed improvements in her MCS for the first time since she became ill. Other patients with intratable chronic infections have experienced significant improvements in immune function and a resulting lowering of their total microbial body burden.

Dr. Klinghardt has observed numerous patients who have struggled to rid the body of parasitic infections. In these patients, regardless of the interventions used, the patient continues to experience these parasites on an ongoing basis.

Types become far less of a concern in most patients. Once all of the bodily toxicities are back online and functioning properly, a few months after introducing the HPU protocol, patients have experienced additional improvement in immune function and a resulting lowering of the total microbial body burden.

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**Multiple Sclerosis**

Dr. Klinghardt has treated many patients with Multiple Sclerosis. All of the MS patients that he has treated have been highly positive for HPUs. Over time, he has come to the conclusion that HPUs can lead to MS in some patients. He has found that patients with MS respond favorably to HPUs. In patients with HPUs, histamine levels are almost always low. The treatment for MS patients with HPUs should include histamine in addition to the HPU protocol outlined later in this article. Treatment with histamine may be either with oral or transmendal products. Prokarin is a transmendal patch which increases histamine and has been used by some in the treatment of MS.

Dr. Klinghardt has followed the interest of HPUs in the pathogenesis in regards to HPU,identified as a key to the immune system. The role of the immune system to the treatment of HPUs has been largely unexplored. HPUs and Multiple Sclerosis have been key for Dr. Klinghardt to understand the patient's condition before beginning treatment for patients with MS.

**Evaluation and Testing**

HPU levels can be measured from urine through the laboratory Vitamin Diagnostics. The test costs approximately $55 dollars. A lab kit is ordered and the urine sample is returned to the lab by the patient. It is important that the patient follow the directions as outlined by Dr. Klinghardt and/or your practitioner as the test kit instructions are not always followed. Until recently, Vitamin Diagnostics offered a test for the related component of kryptopyrrol. Recently, they began to offer a test for the hydroxy-hemoporphyrin-2-one (HPL) compound. When filling out the requisition, the practitioner can now select both kryptopyrrol and/or HPL. The HPL test results in a much higher yield.

Dr. Klinghardt finds that in order to get the best possible insight into the patient's condition, it is best to avoid all supplements, especially those containing zinc, biotin, and vitamin B6, for 5-7 days before the test.

Dr. Klinghardt has found that Vitamin Diagnostics has the best test for HPUs available in the United States. In some circumstances, however, patients may still test negative even when the condition is suspected. In those cases, an empirical trial of the HPU protocol may still be warranted.

Other laboratory results that may be suggestive of HPUs include:

- WBC < 5000/mL (due to low levels of HPUs).
- High HDL.
- Low normal alkaline phosphatase (<60UL). 
- Lowered glutathione in red cell membrane test.
- Low taurine in amino acid profile.
- High MCV.
- WBC and RBC zinc and manganese levels may be normal while biotoxins from bone and CNS are completely defiled during times of stress.
- Bone biopsies are a reliable predictor of HPUs. Severe deficiencies of zinc, manganese, lithium, calcium, magnesium and molybdenum are often found.

**Symptoms of KPU/HPU**

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**FEATURE**

**ADHD**

Alcoholism

Depression

Parkinson’s

Bipolar Disorders / Manic Depression

Schizophrenia

Criminal behavior

Multiple Sclerosis

Substance Abuse

Epilepsy

Table 2: A partial list of symptoms experienced in KPU/HPU. Symptoms in bold are tell-tale signs of the condition.

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**FEATURE**

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by Linnette R. Mullin

Fight Factor

FAITH FACTOR

"Trust in the Lord with all your heart and lean not on your own understanding."

Proverbs 3:5

"You will keep him in perfect peace, whose mind is stayed on You, because he trusts in You." Isaiah 26:3

Holding On

by Linnette R. Mullin


I finish my book and lay down. Sherry exhaustion takes over. My body is so heavy I can hardly move or even raise my head, and I have to wait until later. I'm just too weak to get it.

What is wrong with me?

I had avoided seeing the doctor following my second pancreatitis attack. After all, the test results following the first one came back normal, so I didn't have it, right?

But, needing more answers, I made an appointment.

The doctor wants me to double my hydrocortisone for a week. Doctor wants me to double my hydrocortisone. I get a lot of relief. I am able to get to the bathroom and do what it needs to do. Sheer exhaustion takes over. My body is so heavy I can hardly move. I fall asleep and never wake up.

Typically, I'm a strong person. It takes a lot to make me cry. But now, I am hit with exhaustion like I haven't been in years and I am weepy. I can't seem to help myself. I am in a full asleep and never wake up. Thankfully, God strengthened me a bit and prompts me to take my hydrocortisone.

I've been dealing with the course of the evening. I decide that eight weeks of torture is enough and I need answers. I've put off seeing the doctor for too long and I intend to make an appointment as soon as the office opens the next morning.

Though I sleep past 8:00, the nurse calls me. Doctor wants me to double my hydrocortisone for a week. Doctor wants me to double my hydrocortisone. I call my doctor. Knowing it's too late in the day for him to return my call, I still feel a measure of relief just leaving him a message.

I trust God to get it to him at the right time. I can hold on a little longer.

I hate going to the ER. Doctors don't who know and who aren't Lyme literate... they give you those funny looks that tell you you've lost your mind... your story is too incredible to believe - especially when your test results have the tendency to come back normal.

I, also, hesitate to call the doctor's office. Time, money, energy... frustration and seemingly no answers and

miniscule progress after four years of treatment. I'm so tired of feeling like a fool. Don't get me wrong. I'm blessed with the best of doctors, but I hate talking to other nurses. I never get the answers I need. It's just too difficult to explain everything third person over the phone, you know? And what chronological list of items can person afford to run to the doctor every time there's a crisis?

It's 4:55 pm. I'm too late for an appointment. Should I go to the ER?

Scared and feeling like I'm going to die, I give in and call my doctor. Knowing it's too late in the day for him to return my call, I still feel a measure of relief just leaving him a message. I trust God to get it to him at the right time. I can hold on a little longer.

I trust God to return my call. I still need my hydrocortisone for a week. Doctor wants me to double my hydrocortisone. I pray I never need to return to the ER again.

I hate going to the ER. Doctors don't who know and who aren't Lyme literate... they give you those funny looks that tell you you've lost your mind... your story is too incredible to believe - especially when your test results have the tendency to come back normal.

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Strengthening Verses:

"Do not grieve, for the joy of the Lord is your strength." Nehemiah 8:10 (NIV)

"I can do all things through Christ who strengthens me." Philippians 4:13 (NKJV)

"In all things, we are more than conquerors through Him who loved us." Romans 8:37 (NIV)

And for homework, take comfort in the entire 9th chapter of Philippians. "He who dwells in the shelter of the Most High will abide (or rest) in the shadow of the Almighty." (ESV)
Detoxification and Course of Treatment

For many patients, the course of treatment will not be an easy one. This is a treatment that should be done only under the care and supervision of a doctor as patients often experience a worsening in their condition before they improve.

According to Dr. Klinghardt, many of our metabolic enzymes use zinc as part of their molecular makeup. However, in patients with HPU, there is not enough zinc available to satisfy the need. In these cases, lead, mercury and other 2-valent metals bind to these sites instead in a poor attempt to fulfill the role of zinc.

Dr. Klinghardt has found the incidence of HPU in Lyme disease to be 80% or higher.

One approach is to start the patient on agents that will first support removal of metals from the tissues, these could include such as chelators and BioPure MicroSilica. Ricotta EDTA (Depyrrol) is often used next followed by BioPure Phospholipid Exchange. Most patients will require a number of different agents.

It is critical to support the kidneys with specific drainage remedies in order to optimize the removal of heavy metals. BioPure Matrix Electrolytes at two tablespoon daily mixed with a cup of water in a tablet and a teaspoon of agave syrup supports kidney function.

In some cases, the rate of detoxification may need to be slowed in order to improve patient tolerance and comfort. Consideration may be given to both lowering the dosages of the protocol as well as agents that will alkalize the body.
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Many patients with chronic Lyme disease have issues with sulfur intolerance. This leads to a patient being unable to effectively utilize a number of sulfur-containing substances such as alpha-lipoic acid, DMSA, DMPS, and glutathione as well as metals such as garlic. This may be related to genetic set up that may involve the enzymes involved in sulfur metabolism (CBS and others) and homeostatic needs - both of which are depleted in HPU. As molybdenum issues may resolve. Dr. Klinghardt has found that many patients who lose weight. All symptoms may be treated KPU/HPU but the key point is caution should be the rule.

Dr. Klinghardt believes that the KPU/HPU is a significant one, hence he has explored and used various treatments for this condition. He believes that a combination of zinc, manganese, vitamin B6 and certain other constituents is needed for many patients an effective combination based on his own clinical experience and also based on what has been gathered from its use in Europe. Dr. Klinghardt also believes that if someone is proceeding without a practitioner to undertake a KPU/HPU protocol of any kind, caution must be exercised. Generally it is better to start slowly and at low doses in order to determine what is tolerable. It may be that large doses, particularly of zinc, may be required to remedy deep mineral deficiencies. In the presence of large doses, however, one must be aware of possible toxicity, for example in the context of the zinc/copper balance. And there may be specific conditions such as Parkinson's disease and its possible relationship to manganese, that deserve cautious application of KUPU/HPU protocols. Dr. Klinghardt believes that the basic chemistry underlying mineral supplementation to treat KPU/HPU but the key point is caution should be the rule.

Dr. Klinghardt also has numerous practitioners become medical practices and helped to transform many patients who have been on thyroid medication for years may lose weight. All symptoms may be treated KPU/HPU but the key point is caution should be the rule.

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John Quinn
jquinn@daunt.org

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Discover The Top 10 Lyme Disease Treatments

www.Lyme-Disease-Treatment.com
Multiple sclerosis, an abbreviation for MS, is a complex disease of the brain and spinal cord that has a modern history of human misery. Its roots lie somewhere in a tumultuous history of cystic genes in heather and hills of Highland Scotland and on the longboat days of the Vikings. Although cause and...
Immune System Front Line Support

Most of our patients’ immune systems are very weak. In order to provide the nutritional support for a healthy immune system, I recommend Transfer Factor Multi-Immune™. These folks have put a lot of thought into developing a product which promotes healthy natural killer cell function. The combination of transfer factor and the herbal and nutritional base make this an extremely effective product.

Mitochondrial Support

One of the most common complaints among our patients is lack of energy. I became intrigued with NT Factor Energy™ during a medical conference presentation which showed a 40% reduction in fatigue in eight weeks(1). When I tested my patients on this product, they reported a noticeable improvement in energy. The product’s success is due to its ability to deliver a stabilized and absorbable phospholipid complex to promote healthy mitochondrial membrane potential.

Probiotic Support

Prescript-Assist Pro™ is clearly a step above what has been generally available, and I highly recommend it. If you do not have enough good gut flora then you may not only develop GI upset and bad flora overgrowth, but you may also develop food allergies and other ugly stuff. There is nothing more important than a good probiotic. This product was developed to assist you if you are taking antibiotics.

800.755.3402 | ResearchedNutritionals.com

*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.

FINANCIAL ASSISTANCE IS AVAILABLE 
FOR THE CONDENSED COWDEN SUPPORT PROGRAM 
FOR ONE PATIENT OF A PRACTITIONER 
LIMITED AVAILABILITY – CONTACT US FOR MORE INFORMATION 

ABOUT THE COMPANY

Nutramedix was founded in 1993 and currently has facilities in Jupiter, Florida, USA and in Shannon, Ireland supplying highly bio-active nutritional supplements to health care professionals and consumers.

From the beginning, Nutramedix has operated with a unique business model. First, the owners and management work diligently to operate a company according to Biblical principles— with honesty, integrity, value and respect for all people. Its corporate environment is one that works to serve both its customers and its employees, producing one the best customer service teams in the industry. Second, Nutramedix was founded with the goal of using a significant amount of its proceeds to support orphans, widows, Christian pastors and missionaries in economically distressed parts of the world. So as a customer, you are not just purchasing high quality nutritional supplements, you are helping us give back to people in need all around the globe.

ABOUT THE PRODUCTS

Nutramedix has made a significant investment to develop a novel, proprietary extraction and enhancement process used to manufacture its liquid extracts. The result is a highly bio-available whole plant, broad-spectrum extract that is also very cost effective. We were the first to introduce Samento, a rare chemo-type of Cat’s Claw, which has remained one of our signature products. We have since developed a full line of liquid extracts utilizing the same proprietary extraction and enhancement process.

Nutramedix also conducts extensive research to procure the very highest quality raw materials for its powdered capsule products, many of which have been designed to enhance the effectiveness of the liquid extracts. We are committed expanding our line of natural products meeting the highest expectations of health care professionals and consumers.

ABOUT THE FOUNDATION

The owners of Nutramedix have been involved in international Christian ministry since the 1980s. Prior to starting the company in 1993, our Founder and President was a missionary pilot serving tribal groups in Peru. The Kairos Foundation was created in 1995 to fund projects that address both the physical and spiritual needs of people in some of the most disadvantaged areas of the world. The foundation provides ongoing financial support for organizations operating in Africa, Asia, Eastern Europe, North America and South America.