Oral & IV Nutritional Therapy in a Regenerative Medicine Clinic

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Chronic Diseases

• Chronic diseases affect more than 90 million Americans, accounting for 70% of all deaths and 75% of national medical care costs.

• In 2005, nearly one of every two American adults had at least one chronic illness.

INFLAMMATION—the silent killer
DISEASE & INFLAMMATION

• Research continues to indicate that chronic inflammatory processes may be the root of many health problems.

• Strongly linked to DM, CAD, Chronic Pain, Depression/anxiety, Psoriasis, Asthma/Allergies, Obesity, and AD, etc.
Meta-Inflammation

• When it becomes chronic or systemic, the inflammatory process itself becomes the disease.

• Meta-inflammation, has been coined to describe chronic, low-grade, metabolically induced inflammation.

• It uses the same molecules and signaling pathways as classic inflammation.

BIOMARKERS & INFLAMMATION

Biomarkers of Inflammation:

- CRP
- IL-6, 10, 18
- MCP-1 (monocyte chemoattractant protein-1)
- TNF alpha

**Appears to be a link between biomarkers, inflammation and disease**
TRIGGERS of INFLAMMATION

- American diet (SAD)
- Trauma, mechanical stress, pain
- Obesity, DM, CAD
- Genetic factors and polymorphisms
- Food allergies, toxins, heavy metals
- Gut dysbiosis, SIBO, mal-digestion/absorption
- Fungal infection
- Prescription drugs, OTC’s, Recreational drugs/Alcohol
- Aging, hormone deficiencies
- Lack of exercise and sleep
Diets with low glycemic index, high antioxidants (vitamin E, carotenoids) correlate inversely with biomarkers of inflammation.

Brighenti F., Valtuena S., Pellegrini N.: Total antioxidant capacity of the diet is inversely and independently related to plasma concentration of high-sensitivity C-reactive protein in adult Italian subjects. Br J Nutr. 93:619-625 2005
FOOD ALLERGY & INFLAMMATION

- 60 migraine sufferers who completed a 5-day period of withdrawal from their normal diet (subjects consumed lamb, pears and bottled water), the most common reactive foods were wheat in 78%, orange in 65%, eggs in 45%, tea and coffee in 40% each, chocolate and milk in 37% each, beef in 35% and corn, cane sugar and yeast in 33% each upon challenge.

- With the avoidance of 10 common foods, there was a dramatic reduction in the number of headaches per month, with 85% becoming headache-free.

- 25% of the subjects with hypertension became normotensive.

THE DRUGGING of AMERICA
How we put the fires out—or do we?

• 186,000 deaths each year as a result of iatrogenic injury.

• The FDA states that 1.3 million people are injured each year due to medication errors.
  (Reference: Food and Drug Administration (FDA) website, www.fda.org)

• One in five Americans (22%) report that they or a family member have experienced a medical error of some kind.
Regardless of your method of practice, PAIN will often be the motivating factor for most patients who consult physicians.
WHAT CAUSES PAIN?

• **Multifactoral Triggers**

  • Structural
  • Visceral-Somatic & Somatic-Visceral Reflexes
  • Functional Endocrine Disturbances
  • Impaired Hepatic-Renal Detox
  • Nutritional Deficiencies
  • SIBO, Fungal, Mycobacterium Stressors
  • Food, Environmental & Chemical Allergies
  • Toxic Overload
CHRONIC INFLAMMATION & MEDICAL SPECIALTIES

- Neurology: MS, AD, PD, Migraine, CRPS
- Rheumatology: RA, Lupus, OA, CTD
- GI: IBS, IBD, GERD, Gastritis
- Derm: Eczema, Psoriasis, Fungal
- Cards: CAD, CHF, Hyperlipdemia
- Optho: MD, Cataracts, Uveitis,
- ENT: Rhinitis, sinusitis, Allergy, Tinnitus, Vertigo
- Pulmonary: Asthma, COPD, Bronchitis
- Chiropractic: MSK, Systemic Disease
- Dental Medicine: Migraine, MSK, TMS, Systemic Disease
- Family Medicine: Chronic pain, all of the above
Where is the Inflammation?

- Think where is the pain located?
- What is the spinal segment involved?
- What meridian lives there?
- What organ commonly refers?
- *Look for patterns of inflammation*
PATTERNS OF INFLAMMATION

- Frontal Headaches
- Chronic Sinus
- Visual Changes
- Facial Pain
- Bladder Meridian
- Stomach Meridian
INFLAMMATION PATTERNS

- Facial & Frontal Head Pain
- “Sinus Headaches”
- Food Allergy Headaches
- HCL Deficiency
- GERD & Mid back pain
- Dental Stress
- Stomach Meridian
IV micronutrient therapy

• Members from diverse medical groups use these protocols:
  • The American Academy of Environmental Medicine (AAEM)
  • The American Academy of Anti-Aging Medicine (A4M)
  • The American College for Advancement in Medicine (ACAM)
  • The American Association of Naturopathic Physicians (AANP)
  • The American Holistic Medical Association (AHMA)
  • The American Academy of Pain Management (AAPM)
  • The Great Lakes College of Clinical Medicine (GLCCM)
  • The International Society of Orthomolecular Medicine (ISOM)
Higher Serum Concentrations

- IV administration of nutrients achieves serum concentrations much higher than those achieved by oral or IM administration.

- Highest serum dose achieved after oral administration of pharmacological dose of vitamin C is 9.2 mg/dL. IV administration of 50 g/day of vitamin C resulted in a mean peak plasma level of 80 mg/dL.
Correcting Intracellular Nutrient Deficits

- Higher intracellular nutrient concentration necessary in some cases to maintain proper cellular function

- E.g. Magnesium concentration 10 times higher in myocardial cells as compared to extra-cellular concentrations

- in certain disease conditions cell membrane capacity to maintain high concentrations may be compromised

- IV administration of Mg may lead to a significant though transient increase in Mg levels
Myers’ Cocktail

- Treatment pioneered by John Myers, MD – a physician from Baltimore

- Myers did not leave any published or print material on the composition of the IV treatment

- It appears that he used a combination of magnesium chloride, calcium gluconate, thiamine, vitamin B6, vitamin B12, calcium pantothenate, vitamin B complex, vitamin C, and dilute hydrochloric acid

- Current formulations have been modified to by Dr. Alan Gaby who took over care of Dr Myers’ patients after his death in 1984
“Myers’ Cocktail” Indications

- Asthma
- Migraines
- Chronic Fatigue Syndrome
- Fibromyalgia
- Muscle Spasm
- Coronary Artery Disease
- Upper Respiratory Infections
- Chronic Sinusitis and Allergic Rhinitis
The Myer’s Cocktail

• Myer’s Cocktail Composition-

• Magnesium chloride hexahydrate (20%)  5 ml
• Calcium gluconate (10%)  3 ml
• Hydroxocobalamin (1,000 mcg/ml)  1 ml
• Pyridoxine hydrochloride (100 mg/ml)  1 ml
• Dexpanthenol (250 mg/ml)  1 ml
• B-complex 100  1 ml
• Vitamin C (500 mg/ml)  5 ml
• Sterile Water  20 ml
Myer’s Composition, cont.

• B-Complex 100 contains the following per each ml:

• Thiamine HCl 100mg
• Riboflavin 2mg
• Pyridoxine HCl 2mg
• Panthenol 2mg
• Niacinamide 100mg
• Benzyl Alcohol 2%
Magnesium

- *Deficiency is widespread but under-detected*
- Involved with > 350 enzyme systems
- Required for metabolized vitamin D products to be maintained in circulation.
- $B_6$ increases the influx of Mag into the muscle cell.
- Intracellular cation, so RBC magnesium is test of choice

Magnesium Indications

- Back pain, muscle spasms, MS, depression, epilepsy, DM, tremor, PD, arrhythmias, CVD/CAD, hypertension, migraine, cluster headache, PMS, abdominal pain, constipation, osteoporosis, asthma, stress-dependent disorders, tinnitus, ataxia, confusion, and spasms

IV Mag & Migraine

- Beneficial effect of IVMT in treatment of migraine has been demonstrated in some clinical trials


IV Magnesium & Asthma

• Standard of care in ED for acute asthma exacerbations.

• Inverse associations btw intracellular magnesium levels and asthma severity.


IV Magnesium Push

• MAGNESIUM PUSH

• Indications: For patients with hypertension, cardiac arrhythmia, migraines or muscle spasms.

• Ingredients | Amount | Volume (cc) | mOsm
• Magnesium Sulfate (50%) | 3g | 6 | 24.36
• Vitamin B6 (Pyridoxine) | 300mg | 3 | 2.9177
• Total | 9 | 27.2777

• Give as SLOW push; Osmolarity is 3030.8566 mOsm/L
  – Inform patient that they may experience
  – Warmth throughout the body
  – Slight ache in arm where insertion site is
  – Tingling of the lips
  – Sweating

• GIVE IV PUSH SLOWLY
  – For 1st time patients, push 0.5 – 1 cc at a time and wait a minute or two between pushes.
  – Have patient keep you informed of how they are feeling
  – If patient is feeling lightheaded or dizzy, wait until feeling has passed before going on.
Glutathione

• Primary cellular defense against free radicals.

• Functions both as an antioxidant (in the form of glutathione peroxidase) and as a detoxifying agent for many xenobiotics.

• Most effective way of increasing levels is IV
Glutathione Clinical Indications

- “**Failure to detoxify**” is common thread
- FM/CFS/MCS/EMFS
- Auto-Immune diseases including Lyme
- Chronic Inflammation
- Liver, gut (SIBO), kidney disease
- Toxic Metal Syndrome
- Neurogenic inflammation: “brain fog”, MS, Dementia, PD, neuropathies, “chemo brain"
IV Glutathione protects Neurons

- **50% less glutathione (GSH) in the substantia nigra of Parkinson’s patients**
- GSH 600 mg IV bid x 30 days
- **42% decline in disability & continued effect 2-4 months after stopped**
- Protects both telomeres and mtDNA

IV Glutathione Rx

- **Dose:** 600 to 800 mg IV diluted in 20ml SW infused over 15-20 min, 2-3x/wk
- **Push:** 1-2 grams IV post “Myer’s Cocktail” is a common dose once established on glut
- **Precautions:** Rapid infusion can provoke respiratory distress, coughing, rhinorrhea, and vertigo.
- **Common clinical outcome:** increased energy, improved memory
Curcumin

- Anti-inflammatory, Anti-neoplastic, Anti-depressant

- Combination of curcumin and phosphatidylcholine improves absorption of curcumin

- Curcumin appears to bind to the vitamin D receptor and work synergistically with vitamin D

CURCUMIN and Performance

• A randomized, placebo-controlled trial involving 20 healthy, moderately active volunteers.
• Dose: (200mg curcumin b.i.d.), or matching placebo
• Dose was initiated 48 hours prior to a downhill running test and was continued for 24 hours after the test (4 total days)
• It was found that a phytosome delivery system for curcumin (Meriva), had **significant impact on reducing delayed onset muscle soreness (DOMS)**

Curcumin and DOMS

• *Significantly fewer subjects in the curcumin group had MRI evidence of muscle injury* in the posterior and medial compartment of both thighs.

• Increases in markers of muscle damage and inflammation tended to be *lower in the curcumin group*.

• Authors: "*curcumin has the potential for preventing DOMS as suggested by its effects on pain intensity and muscle injury*"
Curcumin Pain & Depression

- Rats induced with "pain-depression" via reserpine (which led to a significant decrease in nociceptive threshold, decreases in biogenic amine levels (dopamine, norepinephrine, and serotonin), and increased substance P, nitrooxidative stress, inflammatory cytokines)

- Administration of curcumin (100, 200 300 mg/kg) was found to be associated with dose-dependent ameliorations in the behavioral deficits associated with pain and depression

- These results suggest that curcumin may play a role in treating pain and depression - two conditions that are commonly found in the same patients.
CURCUMIN and Neuropathy


• The authors conclude, "Curcumin seems to relieve diabetic hyperalgesia, possibly through an inhibitory action on TNF-alpha and TNF-alpha receptor 1."
Curcumin, RA and Pain Meds

• "A Randomized, Pilot Study to Assess the Efficacy and Safety of Curcumin in Patients with Active Rheumatoid Arthritis," Chandran B, Goel A, Phytother Res, 2012 Mar 9

• 45 subjects diagnosed with active rheumatoid arthritis (RA), treatment with curcumin (500 mg/d) was found to be more effective than treatment with diclofenac sodium (50 mg/d) in reducing symptoms of joint swelling and tenderness.

• Authors conclude that curcumin may be more effective than the drug, diclofenac sodium, for patients with active RA.
CURCUMIN IV Rx

• Test dose at 1 to 10 mg/Kg IV on the first day [1]
• Subsequent doses could increase to 40 mg/Kg if tolerated two to three times weekly
• Carrier solutions:
  • Dextrose 5% in Water (D5W) 250 or 500 mL carrier solution
  • 0.9% normal saline may be an appropriate choice based on compounding pharmacy
• Rate of administration: 10 mg/min max until tolerance is established

IM Vitamins

- B12: 1-5 gr IM
- Vitamin D3: 50,000 units IM
- Magnesium: 250 mg IM
- CoQ-10: 60 mg IM
IV Micronutrients

- Myer’s cocktail, Chelation, Vitamin C
- Glutathione
- Magnesium
- Trace Minerals
- Amino Acids
- Curcumin
- ALA
- Milk Thistle
Anti-Inflammatory Protocols

- 10 Day Detox Diet (Vegan, fruits/vegetables only)
- Vegan/Allergy free diet (GF/CF)
- Liposomal Curcumin: 400 mg qd
- Multiple Anti-oxidant: qd
- D3: 5-10,000 qd
- EPA/DHA: 2-6 g qd
- Probiotics: 10-50 cfu qd
- IV Myer’s Cocktail: qd or prn
- IV Glutathione: qd or prn
- MAH (major auto-hemotherapy): qd or prn
Workshop Protocols

• IV-Ozone therapy: Lyme, FM/CFS, Chronic Pain, Arthritis
• IV-High Dose C: Infections, Cancer, FM/CFS, Allergies
• IV-Glutathione: Allergies, Memory loss, Detox
• IV-Magnesium: Pain, Spasms, CFS, IBD, Cardiac
• IV-Silver: Infections, Lyme, Pain
• IV-Myers: Fatigue, Adrenal exhaustion, Pain
• IV-Chelation: Heavy metals, CAD, Pain
• IV-Curcumin: Arthritis, depression, IBS, IBD
• IM-Magnesium, CO-Q-10, B12, Vitamin D3
• Treatment protocols for specific diseases
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