Progressive Peptide Therapy

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Disclosure Statement

I do not have any affiliations or financial arrangements with any commercial entities whose products, research or services are discussed in this presentation.
Peptide Therapy: A new therapeutic paradigm

- **Learning Objectives**
  - Introduction to core principles of peptides
  - Identify how to utilize peptides in treatment protocols
  - Clinical case studies
  - References
Chinese Proverb

“An excellent doctor prevents disease; An ordinary doctor can eradicate disease; The doctor who can only treat disease is no doctor at all.”
What are peptides?

- Short chain of amino acids
- Generally < 50 AA (> 50 becomes a protein)
- Natural, bio-identical or altered (synthetic)
Peptides

- Peptides are naturally occurring bio-regulatory chemicals in the body that act as master controls of many functions, including hormone production, cell signaling, and cell to cell communication.

- To date, >7000 naturally occurring peptides identified in our bodies.
Peptides

- Peptides differ from hormones
- Peptides serve as another layer of bio-regulation
- As natural bio-regulators, peptides exert pleiotropic effects
Peptides

- Can address **immune dysregulation, inflammation** and **ROS** that underlie chronic illness and age-related decline

- Used to treat a wide-range of illnesses

- Used individually or in combinations
Peptides as therapy

- Presently used in neuro-endo-immune conditions and orthopedics for the treatment of ...
- TBI
- Joint injury
- ID --- HIV & Chronic infections (HBV, HCV, CMV, etc)
- IBD--- UC and Crohn’s
- COPD, CF
Peptide Therapy

- **Safe**

- **Effective** → improves and modulates:
  - immune function, production of inflammatory mediators,
  - DNA replication, apoptosis, cell division and renewal, tissue healing, circadian rhythm, hormone production, etc.

- Use your patients’ own genetically designed peptides for healing
Peptides vs. Hormones

- Hormones act on nuclear receptors with resultant gene activation and protein synthesis.

- Peptides act on membrane receptors to activate an intracellular signaling cascade; “cross-talk”.

- Peptide signaling molecules produce a more rapid response with less “side-effects” when compared to hormones.
Peptides

- Thymosin Alpha 1
- Thymosin Beta 4
- Cerebrolysin
- Semax
- Selanck
Immunomodulatory Peptides

- Thymosins (Thymic peptides)
  - Thymosin Alpha 1 (TA1)
  - Thymosin Beta 4 (Tβ4)

- Modulate adaptive immunity
Immune Dysregulation

- Studies show that immune dysregulation and immuno-senescence results in an increase in TH2 relative to TH1.
- This TH2/TH1 imbalance is associated with many common chronic illnesses:
  - Depression
  - Chronic fatigue syndrome/fibromyalgia
  - Autoimmune disease
  - Chronic infections (including CMV, Lyme, viral, parasites)
  - Oxidative Stress: GSH depletion → TH1—TH2 shift
  - Glucose, tobacco, alcohol
  - Dysbiosis
  - Hormones (estrogens stimulate TH2; progesterone and testosterone TH1)
  - Zinc and other mineral deficiencies
Goal: to Increase TH1 and decrease TH2...restore homeostasis

- Boosting NK cell and lowering inflammatory cytokines
  - Peptides (Thymosin alpha-1/Thymosin B4)
  - IVIG
  - Allergy elimination (gluten)
  - Antivirals (Disease progression in HIV is directly correlated to the TH1/TH2 balance)
  - Transfer factors
  - Mushroom extracts
  - High dose B12
  - GcMAF/Neupogen
  - Probiotics
  - Silver
  - Antioxidants/Glutathione (low glutathione decreases TH1 and increases TH2)
  - Chelation (heavy metals stimulate TH2 and lower TH1)
In HIV, shift TH1/TH2 determines progression of dx

- Increased TH1 → confers protection and slower progression. Long term → non-progressors

- Increased TH2 → confers faster progression. Long-term → rapid progressors
Thymosins–TA1/TB4

- Thymosins: discovered in the mid 1960’s, when Dr. Goldstein from Albert Einstein College of Medicine in NY studied the role of the thymus in the immune system.

- 2017: GWU→ TA1 & TB4→ Topics include:
  - Immunomodulation, ID, Sepsis, Liver dx, Eye dx,
  - Neuro --- CVA, Alz Dx, severe TBI,
  - Cardiac---vascular and stem cell effects
Thymosins—1960’s

• “The thymosins ....a family of biologically active peptides with hormone-like properties...... significant role in immunity......”

• “Several of these small peptides, such as thymosin alpha 1 and thymosin beta 4 have important clinical applications.”
Thymosins—1960’s

“The physiological processes that these peptides affect include stimulation or suppression of immune responses, regulation of actin dynamics and cell motility, neuroplasticity, repair and remodeling of vessels of the heart and other injured tissues, angiogenesis, and stem cell differentiation.”
Thymicosins

- Thymic involution

- Decrease in TA1 and TB4
  - and a resultant TH1-TH2 shift
    - increased risk of opportunistic and intracellular infections, autoimmunity, inflammation and cancer
    - This vicious cycle of immune dysfunction results in chronic disease