

Genetics and Myositis

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Overview

- Exploration of genetic aspects of myositis, related diseases
- Answer recurring questions about family connections of myositis
- Chris Dotur
 - Personal story with hIBM
 - How to pursue genetic testing
 - Dangers of genetic testing
- Dr. Tom Lloyd
 - Compare/contrast sporadic vs. hereditary vs. familial disease versions
 - DNA Genetic Sequencing
 - Present Genetic Study
- Questions

Chris Introduction

- Family History
 - Father diagnosed with “IBM” in 1993 at age 44
 - Deceased 2017 at age 67, cause of death “IBM”
 - Paternal grandfather may have been affected
 - Croatian familial heritage
- My story
 - Air Force pilot
 - Started noticing effects around age 30
 - Crucial point during Iraq deployment, age 37

My Path to Diagnosis

- Prior EMG/NCS, MRI, CK levels mostly normal or “slightly elevated”
- 2011, visit to Johns Hopkins Myositis Center
 - Clinical visit w/Dr. Lloyd
 - EMG/NCS, MRI, CK blood draw
 - Muscle biopsy – revealed rimmed vacuoles
 - Compare w/ father biopsy slides – identical, no inflammation
 - Suspect autosomal dominant disorder
- Recommend genetic test w/ University of California-Irvine
 - Fought with insurance for year and a half!
 - Geneticist consult
 - Positive test result, military “Medical Evaluation Board”, retirement

My Disease Particulars

- Cause:
 - Defect in Valosin Containing Protein gene (VCP)
 - First discovered by Dr. Virginia Kimonis, UC-Irvine
- Names:
 - VCP Disease
 - hIBM4
 - IBMPFD
 - fALS type 14
 - Pagetoid ALS
 - Multisystem Proteinopathy (MSP) type 1
- “M” for Myopathy, not Myositis!

My Disease Manifestation

- Typically earlier age onset than sIBM
- Slow progression
- My traits
 - Lower back weakness
 - Difficulty walking up incline
 - Difficulty raising arms
 - Only manifesting myopathy in IBMPFD, not “P” or “FD”
 - Eventually fatal
- Autosomal Dominant – 50/50 chance for sister, children

Compare and Contrast with Other Diseases

- vs sIBM
 - Similar physical presentation, effects
 - Biopsy slides similar – rimmed vacuoles, inclusion bodies, minus inflammation
 - Earlier age onset
 - IBMPFD considered fatal
- vs ALS (Lou Gehrig's Disease)
 - MUCH slower progression
 - Speech retained
 - Tracheotomy not needed
- Motor Neuron Disease (e.g. Dr. Stephen Hawking)
- Medical advancements, disease cross-benefits

Proper Path to Genetic Diagnosis for Patients

- Clinical visit with myositis expert physician
- Laboratory, diagnostic tests
- Potential biopsy
- Geneticist consult
- Final genetic/lab/DNA test
- Can't/shouldn't just skip to final step!

Dangers of Genetic Testing

- “... but I just want to know the truth”
- Pandora’s Box!
- May find out genetic information you didn’t want to find
- Genetic information belongs to family, not just individual
- Genetic info can reveal life-changing information sooner than physical manifestation
 - Psychosomatic effect, changing the way you live your life
- Testing children

Dangers of Genetic Testing

- Impact to Insurance, Employment
- Current and future use of genetic information
- US Genetic Information Nondiscrimination Act, 2008

Questions?