Aging in Marfan and Related Conditions

Juan Bowen, M.D.
Mayo Clinic
Rochester, MN
59 Year Old Woman With Marfan Syndrome

- Diagnosis in young adulthood
- Age 53
  - Family history aortic dissection
  - Aortic root 44 mm
  - Mitral valve prolapse with mild mitral regurgitation
  - Valve-sparing aortic root repair done
New Problem: Unsteady Gait and Imbalance

- Problems identified
  - Lumbar dural ectasia
  - Degenerative hip arthritis
  - Peripheral neuropathy
The Future for Ms. H.

- Health issues related to aging.
- Health issues related to Marfan syndrome.
Number of people age 65 and over, by age group, selected years 1900-2000 and projected 2010-2050

Note: Data for 2010-2050 are projections of the population.
Reference population: These data refer to the resident population.
Source: U.S. Census Bureau, Decennial Census and Projections.

- 65 and over
- 85 and over

4-5 chronic conditions
Life Expectancy in U.S.

Surviving (%) vs. Age

- 2003
- 1990
- 1950
- 1900

Age: 0-100
Surviving (%): 0-100
Marfan Syndrome Life Expectancy

• 1972 – median survival 48 years
• 1993 – median survival 72 years
• Why?

• Basic and clinical research leading to better diagnosis and management.
Major Causes of Death in U.S.

- Cardiovascular disease
  - Stroke
  - Heart attack
- Cancer
- Other
Health Behaviors Which Reduce Life Expectancy

- Tobacco use
- Alcohol use
- Obesity
Normal Aging

• Normal aging
  • Decreased reserve
  • Characteristic changes in body systems

• Marfan syndrome/related disorder
  • Specific issues
Quality of Life Issues

- Mobility
- Special senses
- Pain
- Fatigue
- Depression
- Anxiety
Body Systems

- Cardiovascular
- Respiratory
- Kidney
- Musculoskeletal
- Ocular
- Gastrointestinal
- Endocrine
- Neurologic
Aging of the Cardiovascular System

- Hypertension
- Heart valves
- Coronary arteries
- Conduction system
- Heart muscle
MFS/RD Cardiovascular System

- Aorta
- Heart valves
- Heart muscle
Preventive aortic repair
Aging of the Kidneys

- Expected decline in kidney function
- Hypertension
- Diabetes
- Toxicity from medications
MFS/RD Kidneys

- Benign kidney cysts
- Kidney damage
  - Hypertension
  - Diabetes
  - Vascular disease
  - Medications
Aging of the Eye

- Cataract
- Glaucoma
- Macular degeneration
MFS/RD Eye

- Myopia
- Retinal tears
- Lens dislocation
- Glaucoma
Iridodonesis
Aging of the Musculoskeletal System

- Degenerative arthritis
  - Spine
  - Hips and knees

- Decreased muscle mass
MFS/RD Musculoskeletal

- Spine
  - Scoliosis
  - Chest wall
  - Dural ectasia

- Joints
  - Accelerated degenerative arthritis

- Muscles
  - Myopathy
Aging of the Respiratory System

- Chest wall and lung function
- Asthma and emphysema
MFS/RD Respiratory

- Chest wall effects on lung function
- Sleep apnea
- Pneumothorax
Aging of the Nervous System

- Imbalance
- Parkinson's disease
- Peripheral nerves
- Cognitive function
Cognitive Function

- Attention, processing speed, and episodic memory decline in normal aging
- An active and engaged lifestyle early in life is protective
- Continued physical activity is protective
MFS/RD Nervous System

• Central nervous system
  • No known changes

• Peripheral nervous system
  • Effects from dural ectasia
Aging of the Endocrine System

- Type 2 diabetes
- Thyroid
- Osteoporosis
MFS/RD Endocrine

- Central obesity and risk of diabetes
- Osteoporosis
Variations in Fat Distribution
Bone Density Measurement

[Image: Right Femur Bone Density measurement graph]
Aging of the Gastrointestinal System

- Acid reflux
- Motility disorders
MFS/RD Gastrointestinal System

- Acid reflux
- Motility disorders
Gastrointestinal
Aging of the Hematologic System

- Cell lines
  - Red blood cells
  - White blood cells
  - Platelets

- Most changes in blood counts are reactive and not primary bone marrow diseases

- Bone marrow malignancies
MFS/RD Hematologic System

• Eosinophilic disorders in LDS
Aging and Mental Health

- Depression
- Anxiety
- Chronic pain
- Loneliness
Chronic Pain
MFS/RD Mental Health

- Depression
- Anxiety
- Chronic pain
- Disability
Medical Care

- Self care
- Primary care
- Specialty care
Exercise and Physical Activity in Marfan Syndrome and Related Disorders

Alan C. Braverman, MD

www.marfan.org
Medications

- Older people take 2 – 9 medications
- Issues
  - Altered drug processing
  - Drug-drug interactions
  - Drug-disease interactions
  - Supplements


Living with Marfan Syndrome: The Impact of Osteoporosis and Hypercholesterolemia on QoL and Reproductive Planning by Paul Wordsworth, C. Forfar, J. R. Stradling

Decisions in Medical Care

• Evidence based
• Practice guidelines
• Clinical judgment
• Collaborative
Team Care

- Primary Care
- Specialty Care
- Psycho-social
- Pain-Rehab
- Personal Behaviors
- Spiritual
THE MARFAN FOUNDATION

Know the signs. Fight for victory.
Take Home Points

• Research is providing insights into aging
• Leading causes of death → CV disease and cancer
• Life expectancy in Marfan syndrome is now near normal.
• Everyone needs team-based primary care appropriate for the stage of life
• There are special concerns with Marfan syndrome and aging
Questions or Comments?
bowen.juan@mayo.edu