GERIATRICS 102

November 16, 2013

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GERIATRICS
102

Objectives

- Define the field and role of Geriatrician
- Describe the changing demographics of the elderly population
- Discuss the aging process
- Understand the practice of Geriatric Medicine
AGING

Good and Bad News!!

Good News
We are living longer

Bad News
We are living longer with chronic medical ailments (and this is what led to the field of Geriatric Medicine)
GERIATRICS

BRANCH OF MEDICINE THAT FOCUSES ON:

HEALTH PROMOTION
PREVENTION
TREATMENT OF DISEASE AND DISABILITY
IN LATER LIFE
3 out of 4 adults > than 65 years old have multiple chronic conditions
50% have 3 to 4 chronic diseases and the associated accumulative effects
From the Robert Wood Johnson Foundation - 2012

Multi-morbidity is associated:
- with higher rates of death
- increased disability/decreased function
- increased adverse effects
- institutionalization
- increased use of healthcare resources
- poorer quality of life
GERIATRICIAN

A MEDICAL DOCTOR (INTERNAL MEDICINE OR FAMILY PRACTICE) WHO IS SPECIALLY TRAINED TO PREVENT AND MANAGE OLDER ADULTS’ UNIQUE AND, OFTEN TIMES, MULTIPLE HEALTH CONCERNS.

Now an accepted sub-specialty of IM/FM and soon, with the baby boomers aging, will probably be as recognized and popular as pediatrics is today.
Need for GERIATRICIANS

40% of the adult hospitalized patients are 65 or older

20% of Medicare patients utilize 80% of Medicare resources

By 2030 there will be 70 million (currently 35 million) Americans who will be 65 years or older.

Currently there are 7,000 geriatricians and it is anticipated that the need will be for 20,000 within the next 10 years.
The number of certified geriatricians per 10,000 population age ≥75 is 3.6 (state ratios in parentheses).

Above national mean
Below national mean

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1American Board of Medical Specialties, 2005 Annual Report and Reference Handbook
2Census 2004 as compiled by the Administration on Aging

Source: ISH ADGAP Status of Geriatric Workforce Study, 2006
Changing Demographics of the older patients
## Population of 65+ years olds from 1900 to 2050

<table>
<thead>
<tr>
<th>Years</th>
<th># in millions</th>
<th>% of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>3.1</td>
<td>4%</td>
</tr>
<tr>
<td>1995</td>
<td>33.5</td>
<td>13%</td>
</tr>
<tr>
<td>2010</td>
<td>39.4</td>
<td>15%</td>
</tr>
<tr>
<td>2030</td>
<td>69.4</td>
<td>20%</td>
</tr>
<tr>
<td>2050</td>
<td>85+</td>
<td>25% +/-</td>
</tr>
</tbody>
</table>

Data from U.S. Bureau of The Census
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.
US - LIFE EXPECTANCY
FROM BIRTH
78.3 in 2010 vs. 75.8 in 1995

<table>
<thead>
<tr>
<th>Gender</th>
<th>2010</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Female</td>
<td>81.3 Years</td>
<td>79.6 Years</td>
</tr>
<tr>
<td>White Male</td>
<td>76.5 Years</td>
<td>73.4 Years</td>
</tr>
<tr>
<td>Black Female</td>
<td>77.2 Years</td>
<td>74.0 Years</td>
</tr>
<tr>
<td>Black Male</td>
<td>70.2 Years</td>
<td>65.4 Years</td>
</tr>
</tbody>
</table>

US Census Bureau – Life Expectancy
YEARS OF LIFE IF YOU REACH AGE 65* (US)

Male - 19 yrs/84
Female - 21yrs/86

1/10 - 65 year old will reach 90
1/100 - 65 year old will reach 95

*Social Security Administration – Life Expectancy
THE “100” YEAR OLD CLUB
85% female – 15% male
(most in the US and Japan)

1950 - 4,475 (US) 100 years or older
2010 - 75,000+ (US) - (654 +/- in Arizona)
2050 - 600,000 – 1,000,000 (US) (from the estimated 76 million baby boomers)

Super-centenarians Club (110 or older)
In 2011 – 88 +/- Validated living supercentenarians in the world
- 82 Females +/- & 6 Males +/-

National Center for Health Statistics and CDC 2011
Realistically, how long can a human live?

Life Span for Humans

- Life Span - max. - 120 years
  - Unchanged
- 78 years (85+ if reach 65)
  - Increasing 1 year per decade

World Record for Longevity

World - 122 - Jeanne Calment (1997 in France)

Cellular turnover every 8 years
with a decrease in function each time
Life Expectancy in the USA
Good and Bad News

**Good:** AMERICANS ARE LIVING LONGER!

**Bad:** Growth rates in life expectancy in most high income countries increased, but stagnant in the US

US ranks 42nd for life expectancy
Homogenenity vs. heterogenenity

**Potential Explanations**
Smoking, obesity, lack of universal access to health care, social inequality, levels of physical activity, social integration and social interaction

Population Reference Bureau, Today’s Research on Aging No 22, August 2011
It’s not only about your age, but it’s how you age!!

Healthy Aging and Longevity!!

What are the factors leading to a longer (and healthier) life?
LONGEVITY

- Well Being
- Functional Status
- Health Care System
- Disease
- Epigenetics
- Lifestyle
  - Exercise
  - Nutrition
  - Behavior
  - Personality
- Social Environment
  - Social Support
- Cultural Environment
- Ecohabitat
- Gender
- Genes

- Nutrition
- Behavior
- Personality
- Social Support
"Hi, I'm Dr. Jones. Sorry about my little prank, but it saves us a fortune in enemas."
Good luck with the American health-care system.
Probability of an additional 20-year survival to age 90 years for a 70-year-old man, according to the presence of 0 to 5 modifiable adverse factors at baseline, including smoking, diabetes, obesity, hypertension, and sedentary lifestyle, or their common clustering.
New Guinea Highlander

69 year old man
Healthy aging

Non-smoker
Not obese
Physically active
Nutritious diet
AND
No DM or HTN
or CVD!!
AGING

Is *NOT* a disease and does not generally cause symptoms!!
CHARACTERISTICS OF AGING

Basic Functions Maintained!

- A decrease in maximal capacity
- Ability to maintain homeostasis diminishes
- Biochemical composition of tissue changes
- Physiologic capacity decreases
- Susceptibility and vulnerability to disease increases
- Mortality increases exponentially
Generally, What’s Different About Older Patients?

- Heterogeneity of health status
- Age-related physiologic changes
- Increased prevalence of disease
- Tendency to have multiple, often interacting, diseases
- Generally chronic with acute illnesses superimposed
- Under-reporting of symptoms
- Atypical disease presentations
- Increased importance of social support
- Increased incidence of iatrogenic illness
- Different goals of therapy
GOALS OF CARE IN GERIATRICS

- Care vs. cure approach
- Improvement or maintenance of function and quality of life
- Prevention
- Comfort for terminally ill
Basic Principles of Geriatric Medicine
Patient Center Care for the Older Patient

New Paradigm

Old
Quality based on prevention and disease specific care

New
Quality based on the responsiveness to individual patient preferences, needs, and values AND utilized to appropriately guide clinical decisions.

(not new in geriatric medicine)

NEJM Rueben, Tinetti, March 1, 2012
TWO MODELS OF CARE

Traditional (Cure)

Primary Care
- Episodic
- Reactive to needs
- Passive Patient
- Physician Driven
- Quick Fix - cure
- Disease Approach

Care Management
- Continuous
- Proactive: anticipate need
- Patient Participation
- Team Approach
- Long Term Involvement - care
- Holistic Approach

New (Care) - Geriatrics

Patient Centered Medical Home - Models of care
Disease: Medical pathology
Illness: Includes the personal and social consequences of the disease as well as the medical aspects (i.e. impairments, disabilities, and handicaps).
GERIATRIC CARE

- Is commonly multidisciplinary
- Frequently focuses on caregivers (family/friends/others)
  - Caregiver capability
  - Caregiver stress/burnout
IMPROVING AND MAINTAINING FUNCTIONAL ABILITIES

- Physical
- Psychologic
- Function
- Socio-Economic
Geriatric Assessment focuses on factors affecting the Functional Status of the elderly

- Medical
- Cognitive
- Quality of Life
- Affective
- Environmental
- Social Support
- Economics
- Functional Status
  * Physical
  * Social
GERIATRIC ASSESSMENT TOOLS

- Activities of Daily Living
- Instrumental Activities of Daily Living
- Mini Mental Status Exam (or MoCA)
- Geriatric Depression Scale (GDS)
- Hearing Handicap Screening
- Vision Assessment
- Nutritional Screening Assessment
- Tinetti Balance and Gait Assessment
- CAGE Assessment for Alcoholism
- Medication Assessment
- Safe Driver Assessment
Geriatric Syndromes (versus chronic disease) That Commonly Cause Significant Disability and are Commonly Multi-causal

- Immobility (Frailty)
- Instability (Falls)
- Intellectual impairment (Dementia)
- Incoherence (Delirium)
- Isolation (Depression)
- Fatigue (Asthenia)
- Impecunity (Poverty)
- Inanition (Malnutrition)
- Insomnia
- Iatrogenesis (Polypharmacy)
- Incontinence

Annals Int Med August 7, 2007
COMMON COGNITIVE AND AFFECTIVE DISORDERS

- Dementia
- Behavioral disturbances (associated with dementia)
- Delirium
- Dysphoria
- Depression
- Bereavement
IATROGENIC ILLNESSES

- Nearly 1 in 3 acutely hospitalized patients
- Adverse drug reactions/interactions - MC
- Complications of hospitalization
  - Delirium
  - Falls
  - Immobility (deconditioning)
  - Impaired functional status
- Complications of unnecessary diagnostic and therapeutic procedures e.g. ARF
ETHICAL ISSUES IN GERIATRICS

- Patient autonomy
- Decision-making capacity
- Advance directives and surrogates
- Confidentiality and truth telling
- Life-sustaining treatments - futility
Conceptual Shift for Palliative Care Goals

Old

Life Prolonging Care

Medicare Hospice Benefit

New

Life Prolonging Care

Palliative Care

Hospice Care

Bereavement

Dx

Death
Guiding Principles for Providing Patient Center Care for the Older Patient

- Patient Preferences
- Interpreting the Evidence
- Prognosis
- Clinical Feasibility
- Optimizing therapies and Care Plans
Guiding Principles for Providing Patient Center Care for the Older Patient

Patient Preferences

- Basically all clinical decisions should include patient preferences but most importantly in patients with multiple co-morbid diseases.
- Communicate in understandable terminology
- Inform patients of the risks vs. the benefits of treatments e.g. dialysis, tube feeding.
Guiding Principles for Providing Patient Center Care for the Older Patient

Interpreting the Evidence

- Recognize the limitations (disease vs. illness)
- Determine the applicability for an older patient with multimorbidity
- Evaluate the benefit versus the potential harm and burden to the patient (cardiac patients)
- ARR (absolute risk ratio) vs. RRR (relative risk ratio) – baseline without treatment minus the outcome with treatment = ARR
- Timing of outcome (diabetic management)
Evidence Based Medicine
Clinical Practice Guidelines

Most clinical practice guidelines (CPGs) focus on the management of a single disease

**BUT**

CPG-based care may be cumulatively impractical, irrelevant, or even harmful for such individuals

**Most lack evidence in older adults with multiple medical problems**

JAGS 2012
Guiding Principles for Providing Patient Center Care for the Older Patient

Prognosis

How disease management will affect:

- Life expectancy
- Functional status
- Quality of life
  e.g. Dementia patients
Guiding Principles for Providing Patient Center Care for the Older Patient

Clinical Feasibility

Based on complexity of treatment regimen and risk for:

- Non-adherence
- Adverse reactions
- Poor quality of life
- Increased economic burden
- Greater caregiver stress

Multiple tools being assessed

JAGS 2012 – Special Article – Care for the Older Adult
Guiding Principles for Providing Patient Center Care for the Older Patient

Optimizing therapies and care plans

- Assess and reassess interventions
- Address non-adherence/non-compliance
- Address polypharmacy
- Address the need for a higher level of care
- Address patient preferences
IMPROVED FUNCTION AS A GOAL OF THERAPY

Small Changes in Function Can Make Big Differences in the Quality of Life for Patients.
Die Young As Late In Life As Possible!
Russ Witte
Cincinnati, Ohio

National Senior Olympic Games  Participant 2011
The Wheels of Life

GOAL
Maintain Functional Status
AND
Best Quality of life
LIFE IS NOT A JOURNEY TO THE GRAVE WITH THE INTENTION OF ARRIVING SAFELY IN A PRETTY AND WELL PRESERVED BODY, BUT RATHER TO SKID IN BROADSIDE, THOROUGHLY USED UP, TOTALLY WORN OUT, AND LOUDLY PROCLAIMING 

**WOW.....WHAT A RIDE!**