U of L Geriatrics

Geriatrics and Substance Abuse: Are we ready for the boomers?

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PRESENT POPULATION

77 million Americans are over the age of 50
41.9 are 50 – 64
18.4 are 65 – 74
12.4 are 74 – 84
4.2 are 85+

At age 50, Americans can, expect to live another 30 years
At age 75 can expect to live another 11 years
At age 65 can expect to live till 90

*The elderly currently comprise 13% of the population, utilize 40% of all doctor’s visits and despite occupying 40%of all hospital beds, they utilize 60% of all hospital days.
By 2030, 70 million people will be over the age of 65

This will be about 26% of the population

More than 6 million will be over 85

The oldest old make up the fastest growing segment of the population
GOOD NEWS/ BAD NEWS IN HEALTH

Women live longer, but the gap between women and men is decreasing

Racial differences in life expectancy are decreasing

Smoking rates have decreased in the past two decades – by 23% in women and 36% in men

More Americans are reporting some increase in exercise

People are living longer

Therefore with multiple chronic disease/medications
What is Polypharmacy?

- 5 or more medications taken simultaneously
- More medications used than are clinically warranted.
- A Random Uncontrolled Experiment
Silent Epidemic

A side effect of modern medical care

- 15 minute office visit/Hospital visit
- New drugs added annually
- Over the counter products and supplements
- No captain of the ship
Adverse Drug Reactions

• **2,216,000** hospitalized patients/year experience serious ADR*

• **106,000/year** die from an ADR
  - 631,636 annual deaths are due to heart disease in the U.S
  - 444,000 die from smoking annually
  - 82,432 deaths annually due to Alzheimer’s dementia
  - 72,449 deaths annually related to diabetes

• **ADRs rank as 4-6th leading cause of death (95% CI)**
  - Ranking *after* heart disease, cancer, stroke, (pulmonary disease and accidents)
    • Ahead of diabetes and pneumonia

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*Center for Managing Chronic Disease
The U.S. consumes 80 percent of the world's opioids and 99 percent of its hydrocodone.

PBS News Hour June 2011
Interesting Parallel with BMI

PRESCRIPTION USE:  WVA > TN > AL > KY > AK > SC > MS > IA > VT > MO
Obesity Trends* Among U.S. Adults
BRFSS, 1990, 2000, 2010
(*BMI ≥30, or about 30 lbs. overweight for 5’4” person)
Scope of the problem

• Up to 30% of older persons are admitted to the hospital due to medication related problems.

• For every dollar Medicare spends on NH medications it spends $1.33 addressing medication induced problems.  
  (Ouslander: the cost of healthcare)

• In 2000 it was estimated that MRP’s cost 106,000 lives and 86 billion dollars.  
  (Perry, "When Medicine Hurts")
Economic Impact of Diseases Impacting People over 65 years old

Cardiovascular diseases (all types): $171.1 billion
Cancer (all types): $104 billion
Alzheimer’s Disease: $100 billion
Diabetes: $92 billion
Medication-related problems: $88.2 billion
Osteoarthritis (all musculoskeletal conditions): $64.8 billion
Stroke: $30 billion
Osteoporosis: $14 billion
Parkinson’s Disease: $5.6 billion
(1995 dollars ranking the same today)

Sources: Alzheimer’s Disease Foundation and Referral (ADEAR) Center; National Cancer Institute; American Diabetes Association; Arthritis Foundation; National Center for Health Statistics, 1994; National Parkinson Foundation; National Stroke Foundation
A SHORT LESSON IN THE PHYSIOLOGY OF AGING
Physiological Changes with Aging (muscle loss):

decreased total body water

**Old/Frail**
Decreased water soluble compartment

Drug A
40mg

Concentration = 6mg/ml

**Young**

Drug A
40mg

Concentration = 2mg/ml

©
Physiological Changes with Aging (muscle loss): increased percent body fat

- **Young**
  - Less body fat
  - Fat Soluble Drugs: psychotropics, vitamins A, E
  - Normal Distribution and Metabolism of Lipophilic drugs

- **Old/Frail**
  - High percent body fat
  - Fat Soluble Drugs: psychotropics, vitamins A, E
  - Lipophilic (fat soluble) Drugs are slow to onset of action (Vd is larger) AND they accumulate causing toxicity

= accumulation of psychoactive-fat © soluble drugs
Time to blood level max-changes with changing physiology

- 5mg: Blood stream
- Distributes in fat in 10 minutes
- 10 mg: Blood stream
- Distributes in fat in 1 hr
Physiological Changes with Aging (frailty): decreased protein binding

Example: Digoxin

Younger adult with normal serum protein levels

- Digoxin = 25% protein bound

Elder with decreased serum protein levels

- Digoxin = 15% protein bound

Digoxin = 75% free drug (active)

Digoxin = 85% free drug (active)

Therefore, a subtherapeutic blood level is ok.
Under-estimation Renal (kidney) Function w Normal Serum Creatinine

What is the evidence that a cautious approach is the way to go?

Are we gonna blow out granny’s liver?

Blood flow through the liver decreases and the metabolic capacity decreases with age [Acute ETOH abuse impairs liver function: Bad mix with Tylenol®]

FDA Now: 1. Asking manufacturers to limit APAP in Rx to 325mg (6/11)
   2. NMT 650mg per dose

Max daily=4 grams
LD=7 grams

Approximately 30% of Tylenol® Deaths are unintentional
Are we gonna blow out granny’s liver?

Drug clearance may fluctuate because of EtOH use – especially in binge drinking.

With drugs like warfarin or anticonvulsants, this can have catastrophic consequences.

Or the mixture of sedatives and ETOH – chronic drinkers have decreased effect of say temazepam and binge drinkers will have increased effect when they drink.
Decreased immune function as we age

ETOH itself in large doses is an immunosuppressant

This increases problems with infection and poorer outcomes when an infection occurs

Macrophages (immunomodulators) have benzodiazepine receptors!

ETOH, benzos, opioids all decrease the level of consciousness, thus increasing risk of aspiration

Increased risk of HIV – one of the fastest growing segments of population is the elderly (Thanks to viagra et al?)
NEUROLOGIC CHANGES WITH INCREASING AGE

The brain atrophies significantly: 50% of 85 year olds have some CI

Blood flow to the brain decreases by 20%

There is significant cellular loss, plus disease loss

Proprioception decreases with age

• All of this will be worsened by ETOH and other psychoactive drugs
  – Studies show that the benzos increase cognitive decline – especially the long acting
  – ETOH can give global cognitive impairment
  – Peripheral neuropathy with ETOH abuse and vitamin deficiency
The blood brain barrier is designed to keep polar (hydrophilic) compounds out of the brain. This weakens with frailty. Drugs designed to stay out such as new generation urinary incontinence medications (i.e. solifenacin) can readily cross leading to serious SE’s.
"If you remember, I did mention possible side-effects."
Signs of Medication Related Problems: ???

- Mental status changes
  - Agitation
  - Manic behavior
  - Any change in affect
  - Confusion
- Not eating
- Not sleeping
- Somnolence
- Falls

Naturally Us

Side effects may include:
- Nausea
- Heartburn
- Upset stomach
- Cramps
- Rash
- Bloating
- Diarrhea
- Headache
- Constipation
- Fungal infection
- High temperature

Skin cancer, measles, blumps, chicken pox, bird flu, low sperm count, the plague, leprosy, high blood pressure, and last but not least, blurred vision...

Well... if it gets rid of your ear ache, I guess it's worth it.

By: Sadie & the DREG

www.AllNaturalMe.com
Is it the drug or the disease?

Signs and Symptoms (multiple & nonspecific)

Diagnosis or Drug Side Effect?

New Treatment Added

How often are symptoms attributed to medication side effects?
Akathesia, Agitation & the spectrum of movement disorder
The Boomers Are Coming!

Born between 1946-1964
SOCIAL SUPPORT SYSTEMS

As people age, the social support system becomes more important.

But the longer people live, the more likely they are to live alone.

Especially if they are female: ½ of all females in the 75-84 and 58% of females older than 85 lived alone in 1999.

1/3 of people providing support to the elderly are adult children.
SOCIAL SUPPORT SYSTEMS

During the “baby bust” of the 60’s, there was a marked increase of females not having children.

This means that people now in their 60’s are much less likely to have a social support system with adult children to help.

Those WITH adult children are less likely to live in the same general area.
The Boomers

• 4 million Americans nearing retirement age have a substance abuse problem
• More often than not “high end” professionals with disposable income
• Experts say they will place a tremendous strain on the health care system as they deal with illness and addition
• SAMHSA: between 1998-2008 reported that the number of older people treated for combination cocaine and EtOH tripled.
The Boomers

• Interestingly, the number of older people admitted to the hospital for SA treatment had begun using the substances in the past 5 years
  – Cocaine abuse 26.2%
  – Rx abuse 25.8%

• Boomers typically enter rehab taking an average of 4.5 Rx meds and 3.5 OTC meds
The Boomers

"Boomers are at a critical stage in life when stress mounts from age-related health issues, blended families, grief and loss, financial strain and caring for both aging parents and children. It seems to hit them all at once, and can open the door to alcohol addiction, drug abuse or both."

John Dyben, director of the “Freedom Program for Boomers” of the non profit Hanley Center, WPBeach.
"They are not prepared to simply accept aging, or the physical pain, the trouble sleeping and other problems that come along with it. There is prescription medication for whatever ails you. It's real effective. And much of it is highly addictive."

John Dyben, director of the “Freedom Program for Boomers” of the non profit Hanley Center, WPBeach.
Some Emergency Room Data

**SAMHSA:** 111 percent increase in the number of opiate pain reliever related visits for non medical use opiate overdose

**CDC:** most common poisoning treatments in ER are caused by misuse of pain medications

*as common as poisonings due to illicit street drugs*
SO WHY ARE THE “BOOMERS” DIFFERENT THAN OTHER AGING POPULATION COHORTS?

High demand for a quick fix, and the disposable income to drive it

• It is the perfect storm

Ambivalence towards substances dates back to the 60’s and 70’s

• “Better living through chemistry”
SO WHY ARE THE “BOOMERS” DIFFERENT THAN OTHER AGING POPULATION COHORTS?

Higher member population cohort

The dynamics of the “Me” generation – rightly or wrongly are accused of being more self centered and used to having things their way

Higher risk of substance abuse in this cohort than in others previously

Certainly more accepting of “Sex, Drugs, and Rock and Roll”
The Boomers

National Household Survey on Drug Abuse (NHSDA)

– regression models estimate the number of adults with substance abuse problems in the year 2020.

– the number of adults over the age of 50 with substance abuse problems will double to 5 million during the time period from 1999 to 2020.

– In 2020, approximately 50 percent of persons aged 50 to 70 will be in a high-risk group

High risk is defined as having used EtOH or Marijuana before the age of 30

Versus 9% in 1999
Things are gonna have to change

The way we look at substance abuse in elders
- Redefine limits
- Example: EtOH  Men 1 glass daily, Women less than 1
- Screening for SA should be part of routine physical

We have no treatment algorithms for the elderly
- Yet by 2020, it’s predicted that we’ll need to double the number of treatment centers
- Development of age appropriate treatment models
- Most treatment is institutionalized but that goes against the preference of the older cohort
- Most elders cannot detox at home, they need medical supervision
ETOH AND THE “ELDERLY”
ETOH & COMMUNITY DWELLING ELDERLY 60 AND ABOVE

62% drink ETOH

Heavy drinking in 13% of males and 2% of females

Overall 6% of elderly were considered to be heavy drinkers

In this study heavy drinking was defined as greater than two standard drinks in a day

A standard drink is 1.5 ounces of distilled spirits, 12 oz. of beer or 5 oz of wine

This study lowered the standard definition of heavy drinking because of the elderly lowered tolerance
13\% of elderly trauma patients had blood ETOH levels greater than 0.1

23\% of elderly Psychiatry patients have history of ETOH abuse

10 - 21\% of elderly patients admitted to inpatient med/surg abuse ETOH (may be higher)

In a recent study, 49\% of patients in a nursing home met criteria for lifetime ETOH abuse or dependence
RISK FACTORS FOR ETOH-Rx ABUSE IN ELDERLY

Males

Major life changes or losses

Especially retirement or death of a spouse

Substance abuse earlier in life

Comorbid psyche disorders

Positive family history

Abuse of nicotine

Use/abuse of psychoactive drugs
WHY DO MDs AND HEALTH CARE WORKERS HAVE PROBLEM DIAGNOSING SUBSTANCE ABUSE IN THE ELDERLY?

Faulty assumptions and myths ie the alcoholic as a bum

Denial by the abuser, family and MD: plus no captain of the healthcare ship

May be fewer social signs of problem like losing a job or legal

Substance abuse problems overshadowed by the other medical probs

The physical and/or cognitive decline caused by chronic substance may be thought of as the “ravages of aging”

Substance abuse problems are the “Great Masquerader”
Medication Management and the Elderly *

- Frailty
- Functional Status
- Age *
- Co-morbidities
- Polypharmacy
- Social Support System
- Health Literacy
- Cognitive Status

Isn’t for Sissies!
Misdiagnosed

People don’t like to be identified as having a problem

So, they try to self treat:
Memory problems
Isolation
Pain
Weight loss
Falls

Addiction can worsen or precipitate
- Diabetes
- Ulcers, Cancers, Gout, Stones,
- Cholesterol and heart disease
- Falls
- Memory

Isolation
- Avoidance of MD
- Serious impairment goes unnoticed

Self treatment Mis-self diagnosis Interaction of self treatment / substance w disease More impairment
Rx Abuse

• Attitudes (too good) towards medications

• It has been estimated that 25% to 86% of community-dwelling elderly have pain-related problems.

• Older adults, particularly, are at greater risk for chronic musculoskeletal and neuropathic pain conditions, including arthritis, osteoporosis, lower back pain, and peripheral neuropathies.

• In the geriatric population chronic pain has been associated with depression, anxiety, insomnia, somatic complaints, substance misuse, financial hardship, and poor social support

Risk of Opioid Abuse

- **INCREASED RISK**
  - Higher level of pain severity
  - Depressive symptoms
  - Lower level of physical disability

- **NOT INCREASED RISK**
  - Alcohol problems
  - Spirituality
  - Social support
  - Social network

AND WHAT ABOUT CHRONIC PAIN?

Very common in the elderly

25 – 50% in the community dwelling

40 – 80% in the nursing home setting

1/5 65 yo and older take analgesics several times a week

Of these, 3/5 take prescription pain meds

Chronic pain causes all sorts of complications like depression, decreased socialization, sleep disturbance, and impaired mobility
Did you ever wonder?

Why back in the day: the “Rat Pack” drank EtOH and chain smoked excessively?

Why today’s patients are taking an unprecedented number of medications together?

Why the sudden epidemic of Rx abuse?

Easy to get, there wasn’t much else...besides marijuana, cocaine, maybe LSD

Very available, relatively affordable, poor coordination of care, hard scientific data on efficacy

Easy to get, presumed safe, can be smart about use

...And we didn’t understand the toxicity or consequences

...And, we don’t fully understand the toxicity or consequences

DITTO
Summary

• The Boomers are here (just about)
• Chronic and complex substance abuse in elders is a new phenomenon for health care providers to hurry up and figure what to do about it!
• We can’t stop it until we get better at evaluating and recognizing SA in elders
• Strain on the system?
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