

CHALLENGES OF MEDICATION ADHERENCE IN OLDER ADULTS

ASA 55 Banff 2010

Dr. A. Marin, MD, CCFP, Dip. COE

Dr. Cheryl Sadowski, Pharm.D.

Disclosure

- The speakers have no involvement with industry or other organizations that may potentially influence this presentation

Objectives

1. Describe the impact of non-adherence to medications in older adults.
2. Identify risk factors for non-adherence in older adults.
3. Select and describe appropriate interventions to improve adherence.

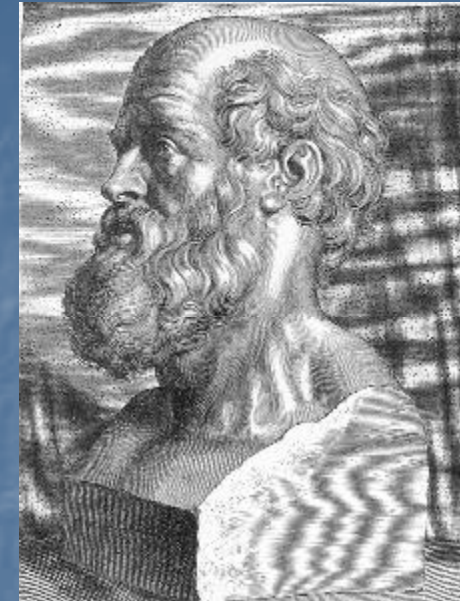
Definitions

- Adherence
 - The extent to which a person's behaviour – taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider.

Definitions

- Compliance

- Health professional – centred
- Negative view of the patient
- Semantics?



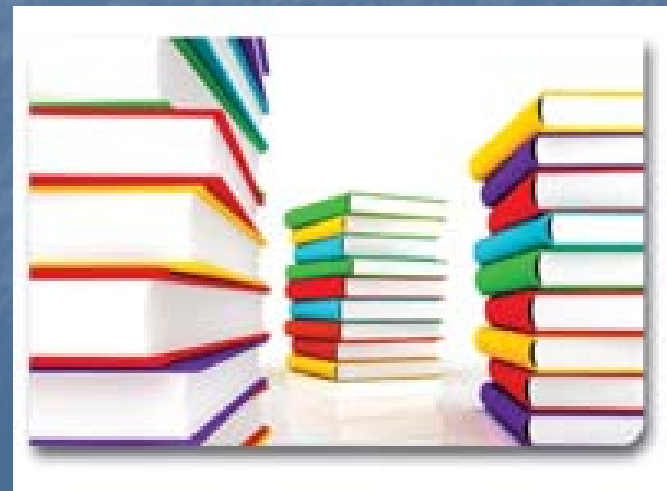
- Hippocrates, 4000 BC

- "...keep a watch also on the faults of the patients, which often make them lie about the taking of things prescribed."

Definitions



- Concordance
 - “a decision making process jointly shared by patients and their healthcare provider”
 - Patient-centred
 - Relationship vs behaviour



Importance of Adherence

- Increasing burden of chronic disease in the society
- Aging population with multiple chronic co-morbidities
- Availability of effective treatments
- Patient safety
- Adherence is an important modifier of health system effectiveness

Epidemiology of Non-adherence

- 71% (34-97%)
- Most studies have found rates 70-80%
- Most chronic diseases have similar adherence, except for respiratory diseases
- Respiratory disease adherence 55%

Adherence Rates by Therapeutic Area

Disease	Mean Adherence Rates (%)
Cancer	80%
HTN	73%
Cardiovascular-all	71%
Epilepsy	70%
Diabetes	73%
Psychiatry	78%
Respiratory-all	54%
-Asthma	55%
-COPD	51%

The Rule of Sixths

Ratio	Adherence pattern
1/6	Strict punctuality
1/6	Virtually all prescribed doses, some fluctuations in dose-timing
1/6	Occasional omit a single day's dose, with fluctuations in dose-timing
1/6	Drug holidays (3 or more days), 3-4 times/year; occasional omission of 1-2 days' doses
1/6	Drug holiday monthly or more often; frequent omissions of 1-2 days' doses
1/6	Take few to no doses

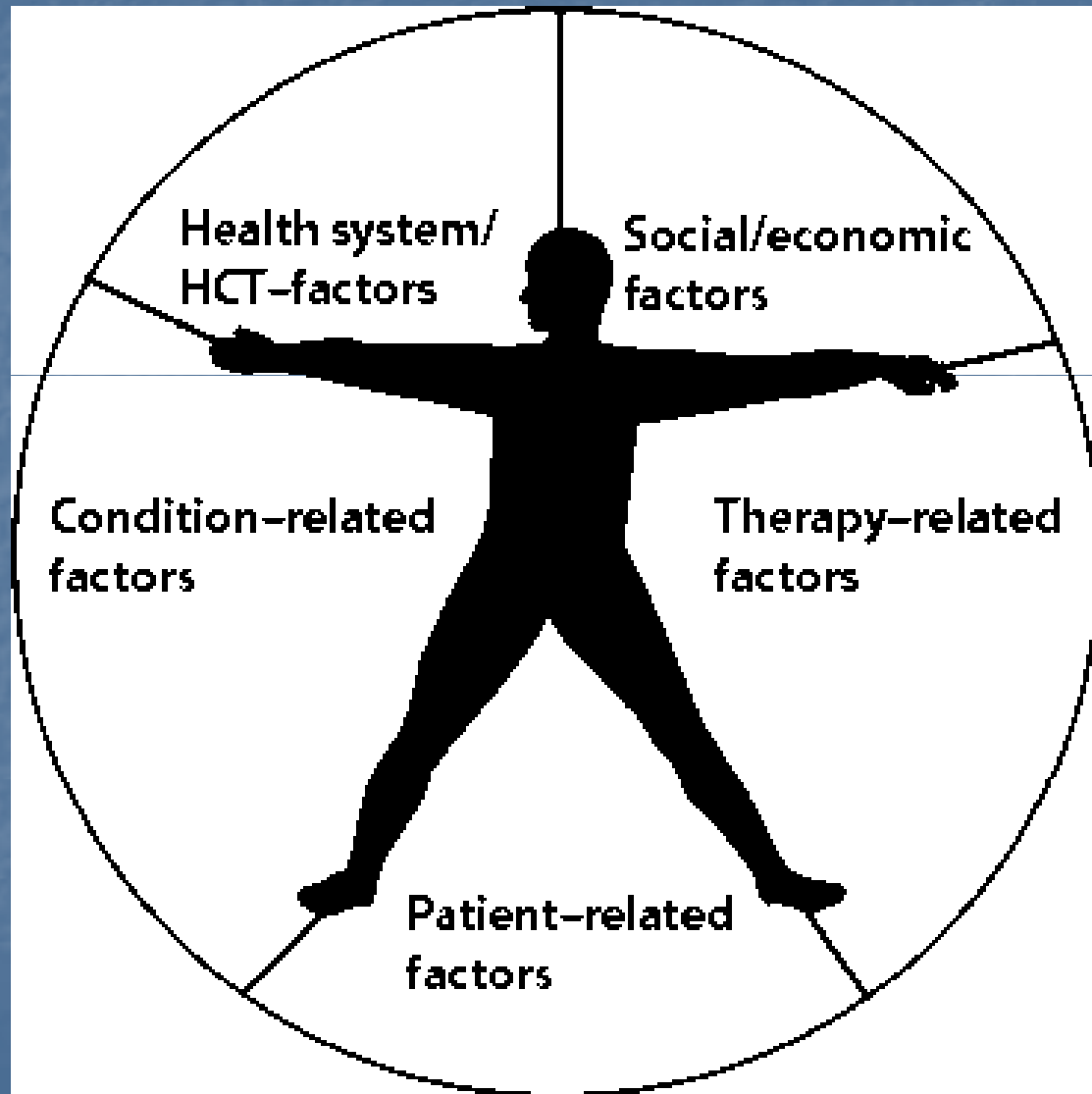
Common Examples of Non-Adherence

- Not filling a prescription
- Excessive dosing
- Insufficient dosing
- Inadequate timing of administration
- Incorrect administration
- Discontinuing medication
- Sharing/borrowing medications

Outcomes of Non-Adherence

- Uncontrolled medical conditions
- Toxicity
- Hospitalizations
- ER visits
- Mortality
- Frequent medication adjustments
- Polypharmacy
- Financial costs

Adherence Barriers



WHO 2003

Non-adherence: Patient factors

- Intentional behaviors: a patient makes a conscious decision to take medication differently than a health care professional anticipated
- Unintentional behaviors

Non-adherence: Patient factors

- Cognition: memory, executive function
- Psychological: Motivation, Depression, Lack of understanding, Personal values/priorities, Experiences/expectations
- Educational level, health literacy
- Cultural background/Beliefs
- Economic/financial
- Social support
- Impairments: Physical, Sensory
- Lifestyle factors
- Previous experiences/ADR
- Multiple illnesses, polypharmacy
- ETOH/Drug addictions

Adherence and Seniors

- The fastest-growing segment of population worldwide
- Existence of one or multiple chronic diseases
- Medications – polypharmacy, complexity
- Higher than normal incidence of side effects/ADR
- Age related changes in pharmacology
- Cognition- one of the major factors
- Non-homogenous group:
 - 60-70y -highest adherence
 - 75y and older - lowest adherence

Non-adherence: Medication factors

- Frequency of dosing
- Type of administration
- Monitoring
- Regimen complexity
- Number of medications
- Adverse effects
- Primary vs secondary prevention

Non-adherence: Health professionals factors

- Communication:
 - unclear instructions
 - levels of trust, poor provider-patient relationship
 - patient's disagreement with the need for treatment
 - failure to recognize patient barriers
- Time constraints
- Lack of support system to health care provider
- Limited use of support system

Non-adherence: Health care system factors

- Timely access to health care
- Lack of continuity of care (hospitalizations, multiple prescribers, multiple pharmacies)
- Lack of integration between different levels of the Health Care system
- Finances/funding
- Formulary restrictions
- Limited research for older individuals

Improving Adherence

- “ Increasing effectiveness of medication adherence interventions may have a far greater impact on the health of the population than any improvement in specific medical treatments” (Haynes, 2001)

Discussion

- How do you assess adherence in your practice?

Assessing Adherence

- “Physicians are poor judges of their patient’s compliance, usually erring on the side of optimism.”
 - Gordis, 1979

Assessing Adherence

- Clinical judgment = 10% sensitivity
- Self-reported adherence = 55% sensitivity
- Do NOT trust your unaided judgment regarding adherence.
- Interview the patient

Assessing Adherence in practice

- Patient self-report
- Disease control
- Blood level monitoring (e.g. digoxin, anti-epileptics)
- Prescription refills (e.g. PIN)
- Pill counts
- Electronic monitoring

Self-Reported Measure

1. Do you ever forget to take your medication?
2. Are you careless at times about taking your medication?
3. When you feel better, do you sometimes stop taking your medication?
4. Sometimes if you feel worse when you take your medication, do you stop taking it?

Self-Reported Measure

- “In the past month, how often did you take your medications as the doctor prescribed?”
 - Non-adherence defined as 75% of the time or less
(Heart and Soul Study, Gehi JAMA 2007)
- Good adherence = >80% of the recommended behaviours (Dunbar-Jacob J, 1998.)

Assessing Adherence: What are your goals?

	Compliance Rate	
Achievement of Treatment Goal	Low	High
No	A: Target Group	B: Inadequate therapy?
Yes	C: Unnecessary therapy?	D: Ideal

Case: Mr. Adams, visit 1

- Mr. Adams is new to your practice. He is 78 yo and his family doctor retired 6 mo ago.
- Mr. A comes with his wife Anne who provides most of the history.
- PMHX: Diabetes, type 2, HTN, OA hands and knees, poor vision due to macular degeneration.
- Life long smoker. No ETOH. Retired mechanical engineer.

Case: Mr. Adams, visit 1

- Daily routine is limited to staying home alone and watching TV. He used to be active and athletic. He slowed down and gained 5 kg over last yr. He blames his aching joints, occ. dizziness and SOB.
- His wife is outgoing and active in church and seniors club. She helps her daughter with grandchildren 3 days/week.
- When asked about medications, Mr. A was vague. His wife gave you a list and requested refills as " they haven't seen a doctor in a while."

Discussion

- What patient characteristics are associated with non-adherence?
- How does Mr. Adams' education and profession affect his adherence?

Case: Mr. Adams, medications

- **Ramipril** 5 mg bid
- **Amlodipine** 10 mg
- **Atorvastatin** 80 mg
- **ASA** 325 mg
- **Furosemide** 20 mg " as directed" for pedal edema
- **Tiotropium** 18 mcg
- **Metformin** 250 mg qid
- **Glyburide** 5 mg tid
- **Insulin NPH** 4 units at bedtime

Discussion

- What are the medication related factors affecting adherence in this case?
- What medication changes would you make?

Case: Mr. Adams, physical findings

- Overweight elder man, BMI 28
- BP 168/84 P 72
- Pedal edema +1
- Productive cough, yellowish phlegm and bilateral wheezing
- OA deformities hands
- He had a nitro patch on his chest but was not sure when it was applied. His wife gave him patch 3 d ago for "chest tightness"
- They are not sure when Nitro was prescribed but they have "quite a few" at home

Discussion

- What is your plan?

Case: Mr. Adams, visit 1

- Plan:
- You renew Rx for 30 days
- Rx Levofloxacin for 10 d for AECOPD
- Order old records
- Investigations: CXR, BW, ECG
- Bring meds next visit

Case: Mr. Adams, tests

- Hb 146, WBC N
- Creatinine 146, Urea 8, GFR 48
- N lytes
- Hem A1C 7.1
- LDH/ration/triglycerides above target
- ECG: NSR, 72 bpm

Case: Mr. Adams, follow up visit

- **1 mo** later Mr. A comes unaccompanied and brings a bag of pills:
- **Ramipril** - half full container, prescribed for 100 d 4 mo ago
- **ASA 325 mg**- expired in 2008, causes bruising++
- **Furosemide** - filled 30 d ago for 100 d, 10 pills left
- **Tiotropium** – expired in 2008, “ doesn’t help”, can’t demonstrate how to use
- **Glyburide** - extra counts, “ makes him dizzy at times”, no BG monitoring
- **Atorvastatin** - full container, Rx 6 mo ago, not sure why not taking
- **Tylenol #3** on his wife’s name, not sure how often
- **Ginkgo** for memory
- **Levofloxacin** - filled 3 days after Rx, 5 pills left
- Didn’t bring **insulin** syringe

Discussion

- What medication related problems have you identified?
- Which health professionals would you involve at this point?
- What are the next steps?

Case: Mr. Adams, intervention

- You suggest:
 - Blister pack pills by pharmacy, wife to supervise
 - Decrease Glyburide to 2.5 mg bid
 - Reintroduce Atorvastatin
 - Decrease ASA to 81 mg
 - Home BG monitoring
 - Come for follow up with wife

Case: Mr. Adams, follow up visit 2

- From community pharmacist: Patient and wife declined blisterpack (\$), wife responsible for ordering and picking up meds, great delays, irregular refill intervals.
- Pt uses dosett, difficulties due to poor vision and hand pain, complex task. Refuses wife's help.
- Tension between spouses.
- Is it time for a nursing home?
- New diagnosis- early **dementia**.

Discussion

- How does the diagnosis of dementia affect the plan?

Case: Mr. Adams, interventions

- Family conference: spouses, daughter
- Home care: medication assistance, education re: dementia, caregiver stress
- Local pharmacy: blisterpack meds, deliver weekly
- Community Care Social/PCN worker/: social day program for Mr. A, support/counseling for Mrs. A
- Home Care/PCN OT: fit for PG stockings
- Regional: diabetic education for pt and wife
- MD: monitor chronic conditions, liaise with other care providers

Case: Mr. Adams, 3 mo later

- Meds blister packed and administered by HC nurse
- Change **metformin** to 500 mg tid
- **Tiotropium** is used regularly with excellent results
- **Atorvastatin** 20mg is tolerated well, good lipids
- **Amlodipine** stopped, pedal edema resolved
- Good BP control with **Ramipril** 10 mg
- Pain-**Tylenol** 650 mg tid
- Stopped **insulin**, **Nitro** patch, **Furosemide**, **Tylenol 3**, **Ginkgo**
- Consider memory enhancing medications
- Mr. A attends day program 3 times/week, happier.
- Wife continues her busy life style , feels less stressed and more in control.

Non-adherence:

Interventions for Long-term treatment

Goal: improve disease control, promote self-management

What works:

- Simplified regimen (qid VS daily)
- Positive reinforcement, supportive care
- Close follow up
- Counseling
- Patient education re: disease (Role of Multidisciplinary team)
- Supervised Self-monitoring (DM, COPD)
- Follow up phone call reminders
- Calendar packaged medications (e.g. dosette, blister pack)
- Adaptation of treatment regimens to suit pt's life style
- Family therapy, psychological therapy

Summary/take home messages

- Medication non-adherence is common among all age groups
- Improved adherence may lead to better disease control
- Adherence can be improved with complex multifaceted interventions tailored for each patient

Resources

- Adherence to long-term therapies. Evidence for Action. World Health organization 2003.
<http://apps.who.int/medicinedocs/en/d/Js4883e/>
- Claxton AJ, Cramer J, Pierce C. A systematic review of the associations between dose regimens and medication compliance. *Clinical Therapeutics* 2001;23(8):1296-1310.
- Haynes RB, Ackloo E, Sahota N, et al. Interventions for enhancing medication adherence. *Cochrane Database of Systematic Reviews* 2008; Issue 2. Art. No.: CD000011.
- Heneghan CJ, Glasziou PP, Perera R. Reminder packaging for improving adherence to self-administered long-term medications. *Cochrane Database of Systematic Reviews* 2006, Issue 1. Art. No.: CD005025.

Resources

- Morisky DE, Green LW, Levine DM. Concurrent predictive validity of a self-reported measure of medication adherence. *Medical Care* 1986;24(1):67-74.
- Touchette DR, Shapiro NL. Medication compliance, adherence and persistence: Current status of behavioral and educational interventions to improve outcomes. *J Manag Care Pharm* 2008;14(6):Suppl S-d:S2-S10.
- Urquhart J. The electronic medication event monitor – lessons for pharmacotherapy. *Clin Pharmacokinet* 1997;323:345-356.