Intro to Geriatric Psychiatry

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Disclosures

- Project ECHO
- UNM SOM

Wellness

- Self-acceptance
- Positive Relations with others
- Autonomy
- Environmental Mastery
- Purpose in Life
- Personal growth

Geriatric Assessment: Illness>Disease

- Basic principles
  - Observational skills
  - Avoid causing discomfort or indignity
  - Evaluate physical, mental, and social function
  - Uncover signs of disease
  - Eliminate iatrogenic factors
- Goals
  - Focus on functioning
  - Educated palliation

Health-Related Quality of Life (HRQL)

- Primary dimensions
  - Physical functioning
  - Social functioning
  - Psychological functioning
  - Overall life satisfaction/ well-being
  - Perceptions of health states
- Additional dimensions
  - Neuropsychological functioning
  - Personal productivity
  - Intimacy and sexual functioning
  - Sleep disturbance
  - Pain
  - symptoms

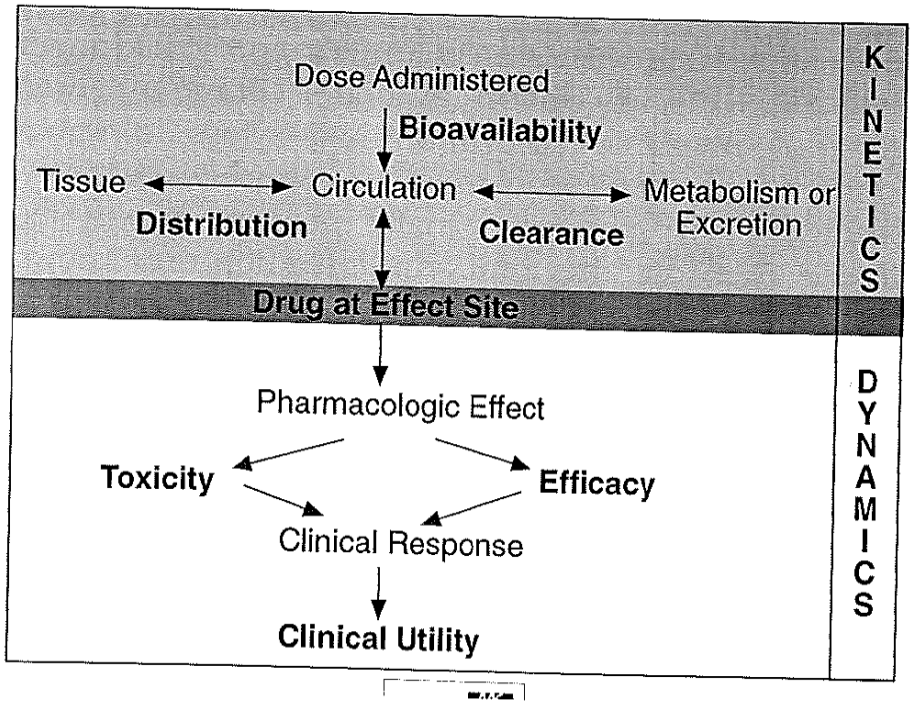
The 2 Rules of Geropsychiatry

- Start low and go slow
- Stop more medications than you start

Start low and go slow

Pharmacokinetics and Pharmacodynamics

FIGURE 23-1



A schematic representation of the pharmacokinetic and pharmacodynamic processes that relate a drug to the effects produced.

Definitions

Bioavailability – fraction of drug reaching the circulation after administration

Distribution–drug dose/concentration measured

Clearance-rate of elimination of a drug from the body

Cytochrome P450 Substrates and Drug Interactions

Cytochrome P450 (CYP) Substrates and Drug Interactions*

Enzyme Isoform	Model Compound	Drug Substrates	Inducers†	Inhibitors†
CYP1A2	Caffeine	Acetaminophen	Rifampin	Cimetidine
	Nicotine	Tacrine	Cigarette smoke	Grapefruit juice
		Theophylline	Char-broiled meat	Fluoroquinolones
			Lansoprazole, omeprazole	Omeprazole
CYP2C	Dapsone	Diazepam	Dexamethasone	Amiodarone
Polymorphic	S-mephenytoin	S-mephenytoin	Phenobarbital	Cimetidine
		S-warfarin	Phenytoin	
CYP2D6	Debrisoquine	Beta blockers	None known	Cimetidine
Polymorphic	Dextromethorphan	Metoprolol		Desipramine
		Propranolol		Mibefradil
		Dehydroepiandrosterone (DHEA)		Quinidine
		Omeprazole		SSRI antidepressants: fluoxetine
		Haloperidol		
		SSRI antidepressants		
		Tricyclic antidepressants		
		Testosterone		

*Examples of drug (and diet) interactions for CYP substrates.

†In order of potency.

TABLE 23-2
Commonly Prescribed Drugs by Therapeutic Class and Reported Alterations in Pharmacokinetics and Suggested Dose Adjustments in Older Patients (continued)

		Aging Effects			
	Route of Elimination	Clearance	Volume	$T_{1/2}$	Dose Adjustment
Ramipril[a]	Renal	↓	N.A.	↑	↓[d]
Angiotensin II receptor blockers					
Irbesartan	Hepatic (CYP2C9)	N.A.	N.A.	N.A.	↓[d]
Losartin	Biliary[a] (CYP3A, 2C9)	↔	↔	↔	↔
Valsartan	Biliary	↓	N.A.	↑	↔ (initial dose)
Miscellaneous					
Pentoxifylline	Hepatic	↓	N.A.	↑	↓
Warfarin	Hepatic (CYP3A)	↔	↔	↔	↓[d,e]
Central nervous system					
Anticonvulsants					
Carbamazepine	Hepatic (CYP3A)	? ↓	N.A.	↑	↓, ↔
Phenytoin	Hepatic (CYP2C)	↔, N.A.	N.A.	↔	↔, ↓[d]
Valproic acid	Hepatic (mixed)	N.A.	N.A.	N.A.	? ↓, ↔
Antidepressants					
Amitriptyline[a]	Hepatic	↔	↑	↑	(prob) ↓
Buproprion	Hepatic	↔, sl ↓	N.A.	↔, sl ↑	↓, ↔[c]
Desipramine	Hepatic (2D6)	↓	N.A.	↑	sl ↓
Doxepin[a]	Hepatic	N.A.	N.A.	N.A.	↓
Fluoxetine[a] (SSRI)	Hepatic (2D6), renal	↓	N.A.	↔	↓[d]
Imipramine[a]	Hepatic (2D6)	↓	↔	↑	↓
Lithium	Renal	↓	?	↑	↓
Mirtazapine	Hepatic	↓	N.A.	↑	↓
Nefazodone	Hepatic (CYP3A)	↓	N.A.	↑	↓
Nortriptyline	Hepatic (2D6)	↓	N.A.	↑	↓
Paroxetine (SSRI)	Hepatic (2D6)	↓	N.A.	↑	↓
Sertraline	Hepatic (2D6)	↓	N.A.	↑	↓

effects of aging elimination route clearance volume $T_{1/2}$ Dose Adjustment

Sedative hypnotics					
Alprazolam	Hepatic (CYP3A)	↓	↔	↑	↓
Diazepam	Hepatic (CYP3A)	↓, M > W	↑	↑	↓
Lorazepam	Hepatic	↔	N.A.	↔	↓[d]
Midazolam	Hepatic (CYP3A)	↓, M > W	↔	↑	↓, χ
Triazolam	Hepatic (CYP3A)	↓	N.A.	↔	↓
Other					

Pharmacodynamics

- Relationship of drug dose or concentration to the intensity of response

Aging effects:

Adverse anticholinergic effects of drugs with only weak or no anticholinergic activity in younger subjects were seen in elderly

Beer’s Criteria

- Article provided

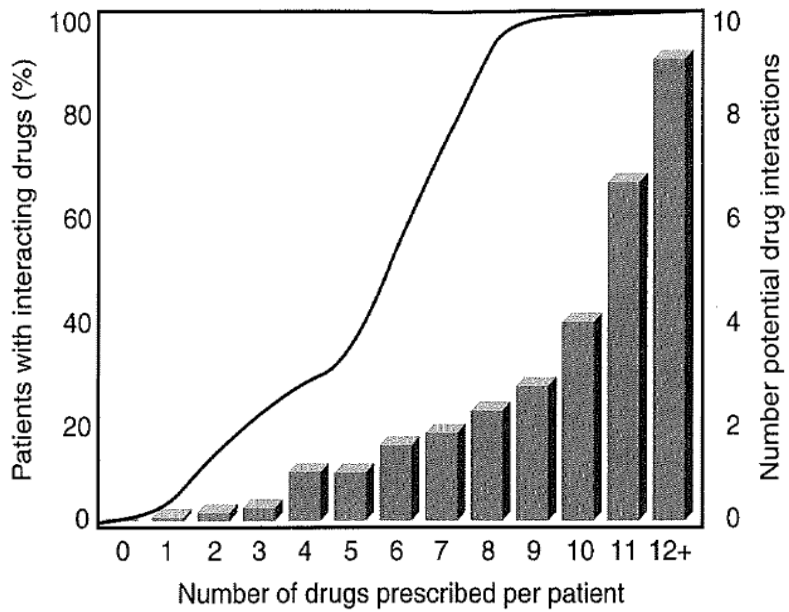
Stop more medications that you start

Stop more medications than you start

- Interactions
- Compliance
- Side effect burden

Interactions

FIGURE 23-10



The relationship between the number of drugs prescribed or administered to a patient and the likelihood of drug interactions. The percentage of patients in whom drug interactions occur rises with increasing numbers of coadministered drugs, with a steep rise when more than five drugs are prescribed. Almost all patients experience drug interactions when 9 or 10 drugs are coadministered. The number of potential drug interactions also rises with the number of drugs administered and rises especially steeply when more than five drugs are coadministered. It is estimated that about 4 potential interactions occur when 10 drugs are coadministered and that about 10 interactions occur when more than 12 drugs are coadministered.

Compliance

- Physicians estimate compliance at 90%

  By 4 weeks, compliance often < 50%

- At age 65, the average person is diagnosed with 2-3 chronic conditions and have 5 prescriptions

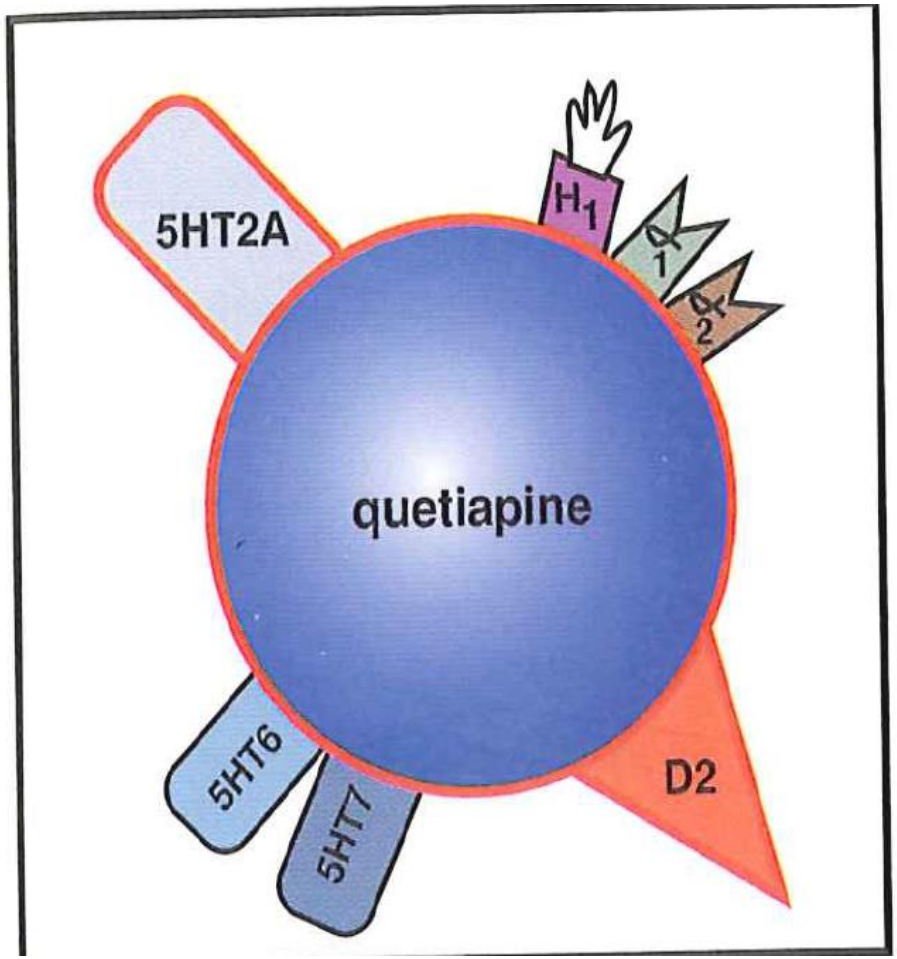
- Compliance drops at 3 prescriptions

Side Effects

- Total drug effect =

  direct effect + indirect effects

More than 1 action (S Stahl)



Summary

- Wellness/ Quality of Life
- Educated palliation
- Beer’s Criteria
- 2 Rules Guiding Pharmacotherapy

Thanks