

Drug use in the Elderly

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Objectives

Identify issues for elderly patients

Review of pathological & physiological changes

Review common diseases for the elderly

Review drugs that contribute to confusion and falls

Discuss Adherence and polypharmacy issues

Issues for Elderly Patients

Issues for Elderly Patients

- *Living longer – but aim is to have good health*
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- Co-morbidities – may be prescribed lots of medicines (polypharmacy)
 - Social – lack of home support (problem in the UK but maybe not in Sri Lanka)
 - Mental – confusion depression, difficulty in understanding instructions
 - Reduced cognitive functions – loss of memory → dementia → Alzheimer's
 - Reduced mobility and dexterity. Also poor vision and hearing
 - Adherence – intentional and non-intentional adherence
 - Age related physiological changes
 - Reduced liver and renal impairment – affects excretion of drugs

Age related physiological & pathological changes

Age related physiological & pathological changes

Absorption

Distribution

Metabolism

Excretion

And as we age there is a natural loss of function at a cellular level which can lead to increased or decreased drug sensitivity.

Homeostatic responses are blunted – eg postural hypotension

Susceptibility is increased to the CNS effects of drugs

Age related physiological & pathological changes

Absorption

Age rarely has a significant effect on absorption

Distribution

Lean body mass ↓ with age – ↑ levels of drugs distributed to muscle eg digoxin

Adipose tissue ↑ up to age 85 – ↑ prolonged action of lipid soluble drugs eg benzodiazepines

↓ Total body water ↑ serum levels of water soluble drugs eg gentamicin and digoxin

↓ Serum albumin ↑ levels of free drug of highly protein bound drugs eg NSAIDs, sulphonylureas and warfarin

Metabolism

Hepatic blood flow reduces by up to 40%

Drugs with high first-pass metabolism can be significantly affected eg NSAIDs and anticonvulsants

Excretion

Natural aging process 30-35% loss of functioning glomeruli between ages of 20 and 80 resulting in 50% loss of normal renal function.

Covered in more depth in the renal session

Common clinical disorders for elderly patients

Common clinical disorders for elderly patients

Arthritis

Constipation

Dementia

Diabetes

Gastro-intestinal bleeding & ulceration

Leg Ulcers

Osteoporosis

Parkinson's disease

Urinary Incontinence

Cardiac Failure

Hypertension

Myocardial Infarction

Stroke

Cancer

Conditions and drugs causing confusion in the elderly

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Conditions

Hypothyroidism

Vitamin B12 deficiency

Alcoholism?

Chronic subdural haematoma

Normal pressure hydrocephalus

Drugs

Anti-parkinsonian drugs

Barbiturates

Benzodiazepines

Diuretics

Hypoglycaemic agents

MAOIs and tricyclic antidepressants

Opioids

Steroids

Drugs which may contribute to falls

Drugs which may contribute to falls

Benzodiazepines

Sedative “Z” drugs

Sedating anti-depressants

MAOI

Drugs for psychosis and agitation

SNRI eg venlafaxine, duloxetine

Opiate analgesics

Anti- epileptics

Dopamine agonists and selegiline in PD (but orthostatic hypotension also common in PD)

Alpha receptor blockers

Centrally acting alpha 2 receptor agonists (clonidine/moxonidine)

Thiazide diuretics (loops less so)

ACEIs

Beta blockers

Anti-anginals

Calcium channel blockers less so

Digoxin/Amiodarone/Flecainide less so

High “risk” medicines in the elderly

Hypnotics – drowsiness and falls

Diuretics – dehydration, renal failure, and confusion caused by hypokalaemia

NSAIDs – fluid retention and GI bleeds

Anti-hypertensives – falls resulting from postural hypotension

Digoxin – nausea, vomiting and confusion (can be signs of toxicity)

Warfarin (other anticoagulants) – bruising and bleeding

High “risk” patients!

Patients taking 4 or more medicines

Patients taking “high risk” medicines

Patients recently discharged from hospital (why?)

Polypharmacy

- Many definitions eg patients on more than 5 or 8 or 10 medicines
- Better to describe as patients prescribed more medicines than are required ie inappropriate polypharmacy
- Contributes to poor adherence, increases risk of adverse effects (and then the introduction of another medicine!), costs money and produces waste
- Focus for many countries as a medication safety issue (one of the early priority areas of the WHO Global Patient Safety Challenge – Medication Without Harm)
- Challenge is to reduce the number of medicines
- Key role for UK Pharmacists

“NO TEARS” – Medication Review or for New Medicines

Need and Indication

Open Questions

Tests and monitoring

Evidence and Guidelines

ADRs

Risk reduction and prevention

Simplification and switches

“No Tears” – Medication Review or for New Medicines – part 1

Need and Indication

Is the drug really necessary?

Is it being used to treat a side effect?

Can it be stopped?

Open Questions

Ask non-directive questions about the medication, such as :

Any problems?

Or Tell me how/when you take these medicines

Tests and Monitoring

Ensure that appropriate monitoring is being done for both desired effects and checking for ADRs

If doing a medication review try to get tests done prior to the review

Check adherence

Evidence and Guidelines

Ensure that treatment is evidence based and complies with up to date local and national guidelines . If it doesn't comply the reason should be rational and documented.

“No Tears” – Medication Review or for New Medicines – part 2

ADRs

Ask about ADRs

Check if medication being used to treat side effects, and if possible, stop or change the causative drug

Risk Reduction and prevention

Pay special attention to high risk drugs

Could the dose be reduced?

If initiating a drug, start at lowest dose and cautiously titrate according to response

Simplification and switches

Could a change of drug or formulation simplify the regimen or make self-administration easier?

(Non) Adherence

Intentional non-adherence

Unintentional non-adherence

(Non) Adherence

Intentional non-adherence

Beliefs about their illness or medication

Religious reasons

Adverse effects

Affordability of the medicines

Unintentional non-adherence

Didn't understand instructions fully

Complicated regimens

Can't read or open the packaging

Forgets to take (sometimes)

Principles of goals of drug therapy in the elderly

Avoid unnecessary drug therapy

Effect of treatment on Quality of Life

Treat the cause rather than symptom

Have accurate drug histories (may have medicines prescribed by a number of doctors or HCPs)

Concomitant medical illness

Good record keeping

Regular review of therapy

Choosing the drug

Dose titration

Right dose form

Packaging and labelling

Adverse Drug Reactions

Adherence

Thank you for your attention

