

An Over View of Geriatric Problems

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Introduction

The phenomenon of aging has always fascinated the man-kind. The concept of retirement did not exist until the later portion of 19th century. No one knows when, why and how old age begins

Ageing scenario in India

Population 60+

1901	12	millions
1961	24	„
1991	56	„
2001	70	„
2025 <i>Projected figure</i>	177	„

Life expectancy

1901	24	years
1991	55	„
2001	74	„

Clinical scenario

More than 50% of elderly have chronic diseases / disabilities. The five most frequent causes of death are pneumonia CAD stroke cancer and tuberculosis

Origin from Greece Roots

GERAS means Old Age, and **IATROS** means physician.

The term geriatrics was coined by Nascher.

Terminology

Geriatrics: The study of medical aspects and care of Elderly

Gerontology: Multi disciplinary study of the phenomena and problems of Ageing

Biological elite: Multiple pathology is so common in old age, that elderly individuals free from disease form the Biological elite

Ageing: Progressive and generalized impairment of functions resulting in loss of adaptive response to stress and increasing risk of age related diseases

Primary ageing: Genetically determined and immutable

Secondary ageing:Attributable to personal, social, and environmental factors that may be subject to change

Life span: The average age at which a person would die if he or she avoided all disease and accidents ie. Natural death

Life expectancy: The number of years of life that any individual may statistically be expected to live from birth onwards

Mechanisms of ageing

Life span is genetically determined, encoded in specific genes.

Somatic mutation of genes Deprivation and deficiency of important nutrients and O₂ .

Wear and tear of important organs by continuous functioning,.

Accumulation of toxic materials like lipofuscin and cholesterol,

Accumulation of free radicals and damage of intracellular structures,

Growth hormone deficiency and Non enzymatic glycosylation of proteins, Impaired

DNA repair due to deficiency of key enzymes

Accumulation of stress over lifetime with its resultant effect

Loss of important genetic material during DNA repair,

Cross linkage of important cellular components,

An increase in chromosome structural abnormalities,

A decline in DNA methylation, Loss of DNA telomeric sequences,

Increase in post translational changes,

Deamidation and oxidation, deterioration of mitochondrial structure.

Physiology of ageing

General: increase in body fat, and decreased body water resulting in obesity and anorexia

Eyes: presbyopia and lens opacification resulting in: cataract and diminished vision

Ears: decreased high frequency and acuity resulting in: deafness (sensory neural deafness)

CVS : decreased baro receptors leading to heart block and decreased arterial compliance – HTN & syncope, decreased B adrenergic response – heart failure

GIT: decreased hepatic function leading to cirrhosis; decreased gastric acidity resulting in osteoporosis, vit.B12 deficiency, decreased colonic motility constipation

Renal: decreased GFR, impaired excretion of certain drugs

CNS: brain atrophy, dementia decline in anterior horn cells – muscle weakness & wasting

Genito – urinary : prostate enlargement – urinary retention vaginal / urethral mucosal atrophy – dyspareunia

Respiratory : decreased lung elasticity resulting in dyspnoea

Pharmacology of ageing

Altered pharmacokinetics: Absorption is usually slower and the drug distribution is altered. Hence Loading & maintenance doses are to be decreased carefully. Protein binding and albumin production are decreased, hence drug concentration changes. Metabolism :occurs mainly in liver, liver function gradually declines with age and hence alteration in drug metabolism & excretion

Pharmacodynamics

Drug receptor sensitivity may be decreased Eg. B-blockers, tolbutamide, glyburide etc. Drug receptor sensitivity may be increased: Eg. Opioids, warfarin, diazepam, ACE inhibitors & theophylline.

Polypharmacy: a common problem in compliance : elders usually consume less than what is recommended

How older patients differ from younger ones ?

Disease presentation is often atypical in older adults.

Disease in older patients often presents at an earlier stage than in younger persons.

Drug side effects can occur with low doses of drugs that usually produce no side effects in younger ones.

Elderly may be less likely to seek medical attention until symptoms become disabling.

Many abnormal findings in younger patients are relatively common in older ones.

Symptoms in older patients are often due to multiple causes and diagnostic “Law of Parsimony” often does not apply.

While cure of disease and prolongation of life are the goals in the care of the young, the goal of care of the elders may well differ from that of the young. Improved function, Comfort and quality of life are key goals.

Health problems of the Aged can be divisible into Problems due to ageing process, Problems due to long term illness and Psychological problems

Problems due to ageing process

Senile cataract & glaucoma, nerve deafness, emphysema, stiffness of joints failure of special senses and changes in mental outlook

Problems due to long term illness

Degenerative diseases of heart & blood vessels, Cancer, Accidents, Diabetes mellitus, Diseases of loco motor system : Osteo arthritis ; Respiratory diseases : chronic bronchitis Genito urinary : prostate enlargement

Psychological problems

Mental changes: Impaired memory, rigidity of outlook, dislike of change,

Sexual maladjustments: Irritability jealousy due to impaired sexual function, Emotional disorders : Resulting from social instability, decreased power, decreased finances, family dependence

Disorders presenting with atypical features in

elderly patients

Myocardial infarction: Fatigue breathlessness palpitation unexplained sweating vomiting without chest pain

Diabetes mellitus: Asymptomatic until the onset of complications nephropathy retinopathy

Peptic ulcer: Anemia, hematemesis, and melina without previous history

The 'I's of GERIATRICS

Immobility, Impecunity, Impotence, Immune deficiency, Incontinence, Isolation, Iatrogenesis, Impaired vision, Instability, Insomnia, Irritability and Intellectual decline

Some adverse reactions of drugs in geriatric patients

Sedatives & hypnotics can cause Confusional states, falls, & incontinence

Diuretics leading to dehydration and electrolyte imbalance.

NSAIDs can cause dyspepsia, upper GI bleed, edema & cardiac failure .

Antiemetics & Neuroleptics can result in Tardive dyskinesia, drowsiness, & Confusional states.

Anticholinergics & anti depressants can lead to Confusion, urinary retention, dry mouth.

Some drugs to be avoided /used with caution in disorders of elderly

Hypertension :vasodilators may precipitate postural hypotension & stroke.B blocker aggravates existing vascular insufficiency

CCF: use diuretics with caution as it can cause dehydration & electrolyte imbalance

IHD: use digoxin with caution. Sub lingual nitro glycerine to be administered in lying posture as it may precipitate postural hypotension & patient falls if administered in sitting or standing posture

Mural thrombus: oral anticoagulants to be used with caution in low dose

Bronchial asthma: Adrenaline should not be used lest it may induce coronary vasospasm Theophylin in usual doses may be toxic due to reduced liver function,

Salbutamol to be given in minimal optimal dose as it may precipitate tachycardia & I H D Prolonged administration of steroids to be avoided

Hypothyroidism: L thyroxin replacement to be started with minimal dose otherwise high doses may precipitate I H D

Constipation: Avoid prolonged use of laxatives as it may produce hypokalemia

Psychiatric disorders: Anti psychotic drugs may cause falls & confusion state if not used with caution

Hyperthyroidism / senile tremors: Initiate propranolol therapy with caution as serum levels may be increased due to decreased first pass metabolism through liver

CVA: Anti edema measures to be used with caution it may precipitate dehydration Manitol may precipitate renal failure

Geriatric abuse

Definition :

Elder abuse refers to the ill-treatment of an older person

Place of elder abuse : his / her home, their children home, or a nursing home

Spectrum : physical abuse , psychological abuse, financial abuse, sexual abuse & neglect

Physical abuse: Slapping, hitting, pushing physical restraint by tying leading to bruises, fractures, burns, sprains, cuts, etc.

Psychological abuse: Repeated use of threats, humiliation, scolding mental cruelty leading to physical & mental distress eg. Treating the elder as a child, isolating etc.

Financial abuse Unauthorized & improper use of resources (funds & properties) of the older person
Ex. Misappropriation of money ,valuable property, forcing the elderly to change the will etc. leading to forced poverty, decline in standard of living

Sexual abuse Direct or indirect involvement of sexual activity without consent eg. Looking, indecent exposure, harassment, touching private parts, sexual assault leading to mental trauma

Neglect Repeated deprivation of the assistance that the older person needs for activities of daily living

Ex. Failure to provide food, shelter, clothing, medical care, & personal care leading to malnutrition, bedsore, depression, confusion & life threatening health problems

Detection of elder abuse

Difficult to detect

skin injuries, bruises, untreated ulcers and bed sores on the older person

Evidence of severe malnutrition & dehydration

Unsatisfactory personal hygiene on several occasions

Medical attention not made available when older person needs it

Medications not used despite clear instructions from the physician

The older person is afraid or hesitant to talk about his / her state of affairs or injury

The older person is left alone without much to do for enjoyment or spending time

Giants of Geriatric Medicine

These refer to the most common causes of incapacity in elderly patients referred to a geriatric unit:

Acute confusion,

Urinary incontinence,

Immobility and Falls

Geriatric assessment

Components of geriatric assessment

Physical

Functional

Psychological

Financial

Social support

Care facility

Environmental

Overall quality of life

Basic activities of daily living

Independent of culture & education

Bathing, dressing, going to the toilet continence, & feeding

Intermediate activities of daily living

Dependent on culture & socio economic status

Using telephone, shopping, preparing meals, house keeping, cleaning clothes, & handling money

Advanced activities of daily living

Dependent on culture, socio economic status, & the past profession

Recreational , occupational & community activities

Medical aspects

Consciousness & other higher intellectual functions

Mobility, gait & balance Nutritional status

Principles & practice of geriatric medicine

Broadly Individuals gradually become more and more heterogeneous as they age

Ageing does not produce an abrupt decline in organ function

Ageing process is accentuated by disease

Ageing is attenuated by modification of risk factors such as smoking alcohol sedentary life style

Healthy oldage can be attained by health promotion & other steps

Preventive geriatrics

Primary prevention

Immunization, Blood pressure screening & Smoking cessation

Secondary prevention

Screening and early detection of asymptomatic disease or early of detection symptomatic disease

Examples

PAP smear for Ca. cervix

Breast exam . or mammogram for breast cancer

Blood Glucose testing for diabetes mellitus

Tertiary prevention

Efforts to improve care

Efforts to avoid later complications
Comprehensive geriatric assessment
Dental care
Proper physiotherapy after a stroke

Multi disciplinary approach

The basic inter disciplinary team usually consists
A physician, Nurse & Social worker
Other members of the team
Physical therapist
Occupational therapist
Dietician
Pharmacist
Psychologist
Speech therapist
Spiritual care

Successful ageing

In 1987 Rowe & Kahn introduced the term successful ageing

Successful ageing refers to modification of behavioral process to achieve the best possible outcome to ageing

Normal ageing

Inexorable & universal physiological changes that occur with ageing

Usual ageing

includes age related diseases which result from the interaction between genetic, environmental & behavioral factors

“Rule of thirds”

states that one third of functional decline in elderly is due to actual ageing, another one third attributable to disease & the remaining is due to disuse

Healthy ageing

Identification of health risks in older individuals
Reduction of disease risk
Health promotion interventions

Summary

The older population is very heterogeneous

Increasing age often brings increasing disability & frailty

The elderly frequently have multiple problems & multiple causes for each problem

Illness often presents atypically in older patients, frequently as a change in function

Geriatric functional assessment examines physiological, mental, emotional, socio economic & environmental function

Geriatric functional assessment is crucial to problem detection, planning, prevention & monitoring in frail older patients

The care plan should address all the problems detected by the assessment

In caring for older patients, a little prevention is greater than big cure

Use of screening instruments helps to assure comprehensive assessment

All levels of prevention ie. Primary, secondary, & tertiary should be adopted

Healthy ageing is attainable

If every one works for the cause of elderly observing all geriatric principles
