

CHRONIC
NON-COMMUNICABLE
DISEASES

By

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Learning Objectives

At the end of this lecture, the students are expected to be able to:

- Define and explain the Chronic Non-Communicable Diseases.
- Describe the risk factors and their importance in causation of CNCs, specially cardio vascular diseases, Diabetes Mellitus and Cancer
- Impart health education and advise to the people about the role of risk factors in prevention and control of NCDs.

Chronic Illness

Chronic diseases are diseases of long duration and generally slow progression

Chronic Non-Communicable Diseases

These are the diseases which are caused by non-reversible pathological alteration and may lead to disability or death. Such diseases usually:

- are permanent
- have slow onset
- have multi-factorial causation
- leave residual disability

Rheumatic Fever & Rheumatic Heart Disease

- Rheumatic fever cannot be separated from rheumatic heart disease from an epidemiological point of view.
- Caused by **group A beta haemolytic streptococci** (throat infection)
- rheumatic fever often leads to rheumatic heart disease
- **Clinical features** : fever, carditis, polyarthritits, erythema marginatum, s.c nodules, brain involvement

Epidemiology

- common in developing countries
- common in children
- Most common heart diseases of age group 5-30 years.
- associated with poor socioeconomic conditions

Epidemiological factors

- Agent factors
 - Agent
 - Carriers
- Host & Environmental factors
 - Age
 - Sex
 - Immunity
 - Socio-Economic
 - High Risk Group

PREVENTION

- **Primary prevention**

Aim is to prevent 1st attack of rheumatic fever by:

- Identifying all patients with strept. throat infection.
- Treating with penicillin. esp school going children.

- **Secondary prevention**

- Prevention of recurrences of RF.
- Identification & treatment with penicillin

- **Non medical measures**

- Improvement of living conditions

- **Evaluation**

- Surveys in school

DIABETES MELLITUS

- It is characterized by state of chronic hyperglycemia.
- Has diversity of etiologies (environmental & genetic)
- Due to defective production or action of insulin (hormone that controls glucose ,fat & amino acid metabolism)
- Clinical manifestation and complication are many, i.e. cardiovascular, renal, neurological, ocular, inter-current infections.

EPIDEMIOLOGY

- It is an iceberg disease
- High incidence & prevalence globally.
- Globally number of cases of diabetes is estimated to be around 150 million. predicted to get doubled by 2025.
- Prevalence rate is about 5.4%.

NATURAL HISTORY

- **Agent:**

- Insulin deficiency

- This can be due to:

- Pancreatic disorders

- Defective Insulin Formation

- Destruction of Beta Cells

- Decreased Insulin Sensitivity

- Genetic Defects

- Auto Immunity

NATURAL HISTORY (Contd.)

- **Host factors:**
 - Age
 - Sex
 - Genetic factors
 - Genetic Markers
 - Immune mechanism
 - Obesity
 - Maternal diabetes

NATURAL HISTORY(contd)

- **Environmental risk factors:**
 - Sedentary lifestyle
 - Diet
 - Malnutrition
 - Alcohol
 - Viral infections
 - Chemical agents
 - Dietary Fibre
 - Stress

SCREENING

- Urine examination
- Blood sugar fasting
- High risk groups are considered to be more appropriate target population i.e age group more than 40, positive family history etc.

NATION FACES RISING RATES
OF TYPE 2 DIABETES

I'M LEARNING TO
MANAGE MY TYPE
2 DIABETES WITH
INSULIN!



PREVENTION AND CARE

- PRIMARY PREVENTION
 - Population strategy
 - Maintenance of Normal Body Weight
 - Health Nutritional Habits
 - High risk strategy
- SECONDARY PREVENTION
 - To maintain ideal body weight
 - To maintain blood glucose level at normal limits
- TERTIARY PREVENTION
 - Rehabilitation & disability control



PREVENTION AND CARE

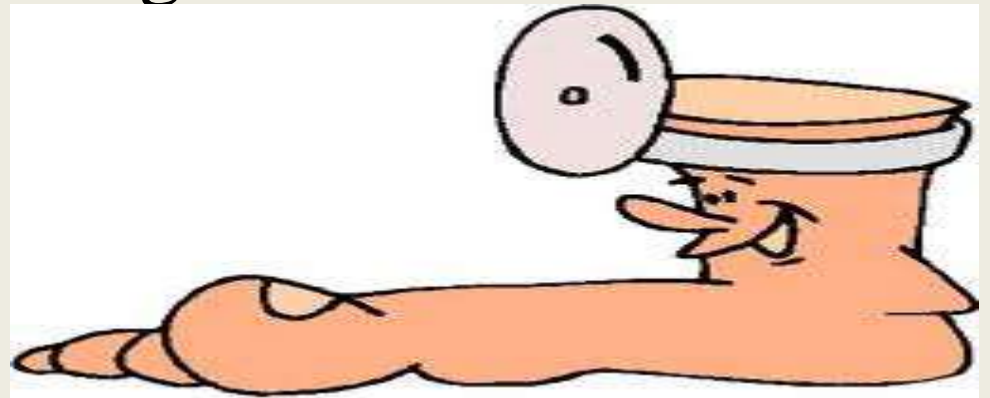
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“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”

PREVENTION AND CARE (Contd.)

- Proper Diabetes Management



- Self Care

- Home Blood Glucose Monitoring.





CANCERS

Cancers are group of diseases characterised by an

- abnormal growth of cells
- ability to invade adjacent tissues and even distant organs and
- eventual death of the affected patient if the tumour has progressed beyond the irreparable stage.

Magnitude of Problem

- World: more than 8 million deaths annually (13%)
- Leading death causing cancers in world:
 - Lung
 - stomach
 - colorectal
 - liver
 - breast

More than 70% deaths occur in low-income countries

Causes of cancer

- **Environmental Factors**
 - Tobacco
 - Alcohol
 - Dietary Factors
 - Occupational exposures
 - Viruses
 - Parasites
 - Customs, Life Style & Habits
 - Others
- **Genetic factors**



Common Carcinogens

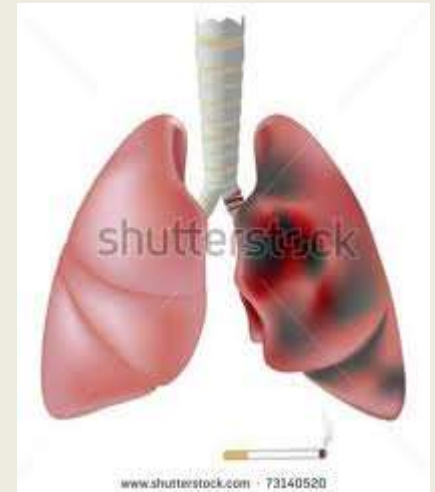
- **Physical Carcinogens:** ultraviolet and ionizing radiation
- **Chemical Carcinogens:** asbestos, components of tobacco smoke, aflatoxin (a food contaminant) and arsenic (a drinking water contaminant)
- **Biological Carcinogens:** infections from certain viruses, bacteria or parasites.



Epidemiology of Cancer

- **Lung Cancer**

- The ASR for the males is seven times higher than of females.
- Major risk factor is tobacco smoking



- **Breast Cancer**

- One-thirds of the cancers in the females
- Incidence is highest in Asia, specially reproductive age group.
- Major risk factors are Early Menarche, Late Menopause



Epidemiology of Cancer (Contd.)

- **Stomach Cancer**

- Identical risk for both sexes

- **Female Genital Tract Cancer**

- Comprises 13.1% of the total cancers in the females

- Cancer cervix is the 3rd most frequent malignancy in the female

Cancer Control

- 1/3rd of all the cancers are preventable
- Primary Prevention
 - Control of Tobacco & alcohol consumption
 - Personal Hygiene
 - Avoidance from Radiations
 - Reduction in Occupational Exposure
 - Immunization against HBV
 - Food products, drugs & cosmetics
 - Reduction in air pollution
 - Treatment of Pre-cancerous lesions
 - Legislation
 - Cancer Education

Warning Signs/Danger signals in Cancer

- A lump or hard area in the breast
- A change in a wart or mole
- A persistent change in digestive and bowel habits
- Persistent cough or hoarseness
- Excessive loss of menstrual blood or loss of blood out of usual dates
- Blood loss from any natural orifice
- A swelling or sore that does not get better
- Un-explained weight loss

SECONDARY PREVENTION

- Cancer registration
 - Hospital Based
 - Collection at source by registry staff
 - Population Based
 - Notification by health-care workers.
- Early Detection of cases
- Treatment
 - Surgery
 - Chemotherapy
 - Radiotherapy
 - Palliative treatment

Cancer screening

- Mass screening
- Selective Screening

