The Chinese University of Hong Kong
The Nethersole School of Nursing
CADENZA Training Programme

CTP 003: Chronic Disease Management and End-of-life Care

Web-based Course for
Professional Social and Health Care Workers

香港賽馬會慈善信託基金
The Hong Kong Jockey Club Charities Trust

Chapter 2
Common Chronic Diseases of Older People in Hong Kong
(Part II)

Lecture Outline

Common Chronic Diseases of Older People in Hong Kong (Part II)

- Osteoporosis
- Chronic obstructive pulmonary disease
- Cerebrovascular accident
- Carcinoma

OSTEOPOROSIS

Osteoporosis

- Systemic skeletal disease
- Low bone density
- Porous bone
- Bone tissue deterioration
- Increased risk of bone fracture

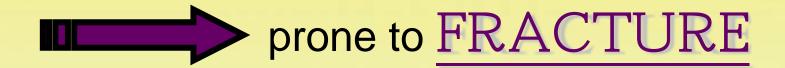(WHO, 2003)

Osteoporosis is characterized by

- Decreasing its strength and resulting in fragile bones and frequent fractures (breaks) in the bones.

- Leads to abnormally porous bone that is compressible, like a sponge

(Medicine Net, 2010)

Have a look at the following slides about osteoporosis

http://www.medicinenet.com/osteoporosis_pictures_slideshow/article.htm

Strength of the bone reduced…

prone to FRACTURE

Most common fracture sites:

- hip

- vertebrae

- wrist

WHO Classification

Normal:

- A value of bone mass density (BMD) within 1 standard deviation (SD) of the young adult reference mean.
- (T-score ≥ -1)

Osteopenia (or low bone mass):

- A value of BMD more than 1 standard deviation below the young adult mean, but less than 2 standard deviations below this value.
- (T-score between -1 and -2.5)

Osteoporosis:

- A value of BMD 2.5 standard deviations or more below the young adult mean.
- (T-score $\leq$ -2.5)

Severe / established osteoporosis :

- A value of BMD 2.5 standard deviations or more below the young adult mean in the presence of one or more fragility fractures.
- (T-score $\leq$ -2.5)

T-score definition

- **"T-score"** is a unit which represents the difference between measured bone mass density and peak bone mass with reference to the young adult population

- (Young adult population mean BMD = peak bone mass)

- T-score diagnostic criteria apply only to BMD measurements of the spine, proximal femur or forearm

$$\text{T-score} = \frac{\text{Measured BMD} - \text{Young adult population mean BMD}}{\text{Young adult population SD}}$$

For details, please click the following link
http://www.oshk.org.hk/upload_files/files/OsteoporosismgtGuidelines2004.pdf

Are you at risk of osteoporosis?

Do a bone quotient now!

http://www.hkosc.org/eng/osteoporosis01.html

Risk Factors

- **Endogenous factors**
  - female
  - small body build
  - Asian or Caucasian
- **Exogenous factors**
  - premature menopause
  - primary or secondary amenorrhoea
  - primary and secondary hypogonadism in men
  - glucocorticoid therapy

(WHO, 2003)

Risk Factors

- Exogenous factors
  - maternal history of hip fracture
  - low body weight
  - cigarette smoking
  - excessive alcohol consumption
  - prolonged immobilisation
  - low dietary calcium intake
  - vitamin D deficiency
  - previous fragility fracture

(WHO, 2003) 17

WANT TO KNOW MORE ABOUT OSTEOPOROSIS?

Click the following link:

http://www.hkof.hk/links.html

PREVALENCE OF OSTEOPOROSIS IN HONG KONG

According to surveys using dual X-ray densitometry:

- 1/3 of Hong Kong women and
- 1/5 of elderly men have osteoporosis

- Currently 300,000 women and 70,000 men with osteoporosis in Hong Kong.

(Hong Kong Orthopaedic and Osteoporosis Centre for Treatment and Research, 2010)

- Osteoporosis is a silent disease

- Undetected until fracture occurs

- 50% of postmenopausal HK women have osteoporosis

- The cost for caring such patients accounts for ~2% of total hospital expenditure.

(HKJOCOC, 2002)

Guidelines for osteoporosis in Hong Kong

Prevention guidelines

- Diagnosis and treatment of osteoporosis issued by The National Osteoporosis Foundation (NOF) of USA

- Hong Kong Jockey Club Centre for Osteoporosis Care and Control (JOCOC) supports the recommendations

Guidelines for osteoporosis in Hong Kong

- Screening and counselling on risk of osteoporosis and related fractures for all women

- Consultation and advice for adequate calcium intake:
  - At least 1200 mg/d, supplementation if necessary
  - vitamin D (400 to 800 IU per day for individuals at risk of deficiency)

- Weight-bearing and muscle-strengthening exercises are recommended

(Hong Kong JOCOC, 2002)

Guidelines for osteoporosis in Hong Kong

- Quit smoking and alcohol abstinence

- BMD screening for all women aged 65+

- BMD screening for younger postmenopausal women who have one or more risk factors

- BMD screening of postmenopausal women who have suffered a fragility fracture

(Hong Kong JOCOC, 2002)

Guidelines for osteoporosis in Hong Kong

- Initiate therapy to reduce fracture risk in postmenopausal women with T-score > -2 in the absence of risk factors and in women with T-scores <-1.5 if one or more risk factors are present.

- Current pharmacologic options for osteoporosis prevention and/ or treatment are:
  - bisphosphonates (alendronate and risedronate)
  - calcitonin
  - estrogen
  - raloxifene

(Hong Kong JOCOC, 2002)

CHRONIC OBSTRUCTIVE AIRWAY DISEASE "COPD"

Chronic Obstructive Pulmonary Disease (COPD)

- A general term to describe chronic lung diseases
- Characterised by narrowing of airway
- Limited air flow to the lungs
- Breathing difficulty
- Not curable

(WHO, 2010)

- Please click the following link for background details about COPD

http://www21.ha.org.hk/smartpatient/en/chronicdiseases_zone/details.html?id=119

Epidemiology

- ~210 million people are suffering COPD globally

- On average, COPD kills 1 person every 10 seconds

- ~90% of COPD deaths occur in low- and middle-income countries

- High risk groups are aged 40+, affecting both men and women

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(WHO, 2010)

The primary cause of COPD is :

TOBACCO SMOKE

(through tobacco use or *second-hand* smoke)

(WHO, 2010)

By 2030, COPD is predicted to become the 3rd leading cause of death in the world

(WHO, 2010)

Prevalence of COPD in HK

- In 2002, COPD became the 4th leading cause of death

- ~9% of older people aged 70+ suffer from COPD

- COPD contributed to 4% of all urgent hospital admissions in 1997

- Accounted for 5.8% of all deaths

Symptoms

- Breathlessness
- Excessive sputum secretion
- Chronic cough
- Reduced ability to perform activity daily living (ADL)
- Weight loss

(WHO, 2010)

Diagnosis

- Chest X-ray

- Blood gas analysis

- Confirmed by a "spirometry" test to measure how much air a person can inhale and exhale, and how fast air can move into and out of the lungs

(WHO, 2010)

Here is the

most updated version of the

Global Strategy for Diagnosis, Management, and Prevention of COPD (2011 version)

Please click the following link for details:

http://www.goldcopd.org/uploads/users/files/GOLD_Report_2011_Feb21.pdf

Disease Management for COPD in Hong Kong

- Early screening, diagnosis and staging
- Smoking cessation
- Long acting bronchodilators with inhaled corticosteroids to provide symptom relief and reduce exacerbations
- Pulmonary rehabilitation for patients with moderate or severe COPD

(Lam, 2006)

Pulmonary Rehabilitation

Pulmonary Rehabilitation

- An evidenced-based, multidisciplinary intervention

- Provides training for patients with chronic respiratory diseases to increase their ability to perform activity daily living (ADL)

(Ries, et al., 2010)

Pulmonary Rehabilitation

Advantages

- reduces symptoms
- improves functional status
- increases daily participation
- reduces health care costs on manifestations of the disease

Pulmonary Rehabilitation

Watch this video to see how older people perform exercise in the pulmonary rehabilitation programme

http://www.nhs.uk/video/pages/medialibrary.aspx?Filter=&Id=%7BA4D71829-05C5-4406-974E-3EEE85E7A9EF%7D&Page=1&Tag=Treatments%2C+procedures&Title=NHS+VIDEOS+%7C+Pulmonary+rehabilitation&Uri=video%2F2009%2FNovember%2FPages%2FPulmonaryrehabilitation.aspx

CEREBRO-VASCULAR ACCIDENT - "STROKE"

Stroke

- Caused by interruption of the blood supply to the brain
  - a blood vessel bursts, or
  - blocked by a clot

- Insufficient supply of oxygen and nutrients causing damage to the brain tissue.

(WHO, 2010)

- Ischaemic Haemorrhage (~80% of all cases)
  - Embolic stroke
    - a piece of fatty plaque formed in a blood vessel breaks off and causes blockage of blood flow to the brain

  - Thrombotic stroke
    - a blood clot formed in the artery causes blockage of blood flow to the brain

- Haemorrhagic stroke (~20% of all cases)
  - an artery rupture in the brain causes bleeding into the surrounding brain

Please click the following link to read background details for a stroke

http://www21.ha.org.hk/smartpatient/en/chronicdiseases_zone/details.html?id=97

Symptoms

- Sudden weakness/ numbness of the body
- Confusion
- Difficulty in speaking/understanding speech
- Difficulty in seeing with one or both eyes
- Loss of balance or coordination
- Unconsciousness

The effects of a stroke depend on which part of the brain is injured and how severely it is affected

(WHO, 2010)

Risk factors

- Increasing age
- Hypertension
- Hyperlipidemia
- Diabetes mellitus, obesity
- Tobacco smoking
- Excessive drinking
- Physically inactive
- Congenital abnormalities of brain vessels

(Centre for Health Protection, 2008)

Diagnosis

- CT scan

- Magnetic resonance imaging

- Carotid ultrasonography

- Arteriography

(Drugs.com, 2010)

PREVALENCE OF STROKE
IN US
IN UK
IN HONG KONG

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Prevalence of stroke in US

- Third most common cause of death
- Around 800,000 Americans suffer a new or recurrent stroke each year
- On average, a stroke occurs every 40 seconds
- Over 2/3 of all strokes occur at age 65+
- African Americans are more likely to have a stroke than Caucasians

(American Stroke Association, 2010; Merck, 2007)

Prevalence of stroke in UK

- Third most common cause of death

- Around 150,000 people suffer a stroke each year

- Contributes to 9% and 13% of all deaths in men and women respectively

(The Stroke Association, 2010)

Prevalence of stroke in HK

- Fourth leading fatal disease

- Around 3000 people die of stroke each year

- Early onset at age 50+

- For further details, please click the following link:
  http://www.chp.gov.hk/tc/content/9/25/58.html

(Hospital Authority, 2009)

Treatment should be given within three hours of symptoms occurring

Early treatment with the clot-dissolving drug t-PA helps reduce disability significantly for thrombotic haemorrhage

(About.com, 2010; American Stroke Association, 2010)

Treatment

- Tissue plasminogen activator (t-PA) can restore blood flow and oxygen to brain tissue

- t-PA can significantly reduce the effects of stroke and reduce permanent disability

- Only effective for treating ischaemic haemorrhage

- Haemorrhagic stroke may need surgery to remove the blood clot and relieve the pressure

(American Stroke Association, 2010)

Preventive Treatment

- Use of antiplatelet agents e.g., aspirin and anticoagulants (warfarin) helps reduce blood clotting

- Carotid endarterectomy removes blockage due to plaque in the carotid artery by surgery

(American Stroke Association, 2010)

Prevention is often better than cure.

The best preventive method is to avoid the risk factors.

Stroke Rehabilitation

- Set goal (be individualised, specific and realistic)

- Aims to retain and improve the individual's ability to take care of his/her ADL

- Early initiation to prevent complications e.g., stiff joints, bedsores and pneumonia

- Family members can be one of the most important positive factors in rehabilitation, if they know what to expect and how to handle problems

(American Stroke Association, 2010)

CARCINOMA

Carcinoma

Uncontrolled cell division
Abnormal cells invade other tissues

- All cancers begin in cells
- The genetic material (DNA) of a cell become damaged or changed, producing mutations that affect normal cell growth and division
- Cells do not die and new cells form when the body does not need them; these extra cells form a mass of tissue called a ***tumor***

(National Cancer Institute, 2010)

Tumors

Two types of tumor

1.Benign tumors

- cells do not invade or spread to other parts of the body

2.Malignant tumors

- cancerous
- cells metastasize to the nearby tissues and spread to other parts of the body

(National Cancer Institute, 2010)

But ....

some cancers do not form tumors

e.g., **leukemia** is a cancer of the bone marrow and blood, no tumor is formed

(National Cancer Institute, 2010)

Causes/Risk Factors

- Chemicals
- Environment
- Food
- Genetic hormones
- Infectious agents
- Radiation
- Tobacco
- Weight and physical inactivity

Please click the following link for details:
http://www.cancer.gov/cancertopics/prevention-genetics-causes/causes

Want to know about the cancer statistics in different age groups

in Hong Kong?

Please click the following link:

http://www3.ha.org.hk/cancereg/e_a1b.asp

Do you know
the top 10 leading cancer sites,
including the most common cancers
and major causes of cancer deaths
in Hong Kong?

Please click the following link:
http://www3.ha.org.hk/cancereg/e_rank.pdf

Management

- Goals of management:
    - remove the tumor(s)
    - reduce carcinoma-related symptoms
    - maintain functional capacity as much as possible
    - maintain quality of life

Do you think there is any difference in cancer management between young and old cancer patients?

The goals of managing cancer in older patients may **differ** from younger patients

- Older patients may have higher risk of complications due to:
- co-morbidities
- poor functional status
- poor cognitive function
- polypharmacy
- depression

Increased need for supportive care

(Ershler, 2003)

Management - Palliative Care

- Aims to reduce cancer complications and relieve symptoms

- Make the patient more comfortable

- Improve quality of life

- May be given in combination with other curative treatments, or by itself when cure is not possible

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