



West African Health Organization

Training Manual for Traditional Medicine Practitioners



On Six Priority Diseases in West Africa



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PREFACE

Traditional medicine has strong historical and cultural roots, particularly in developing countries. In general, traditional healers or practitioners are highly respected and well-known members of their local communities. They are generally very skilled and competent in their work, but with the increasing use of traditional medicines worldwide, there are now calls for stricter controls to foster consumer safety.

In a bid to support countries to integrate traditional medicine into their national health systems, the 2002-2005 WHO Traditional Medicine Strategy sought to respond to this call. In 2003, a WHO resolution on traditional medicine urged Member States, where appropriate, to formulate and implement national policies and regulations on traditional and complementary and alternative medicine to support their proper use. Moreover, in recognition of the increasing use of both traditional and conventional medicines, the 2009 WHO resolution (WHA62.13) on traditional medicine further urged Member States to consider, where appropriate, inclusion of traditional medicine in their national health systems. Member States were to consider, where appropriate, establishing systems for the qualification, accreditation or licensing of practitioners of traditional medicine and to assist practitioners in upgrading their knowledge and skills in collaboration with relevant providers of conventional care.

The development of this booklet for the training of Traditional Medicine Practitioners on the six priority diseases is part of the West African Health Organisation's attempt to support the Member States to implement these WHO resolutions. They reflect what the experts, who contributed to developing them consider to be reasonable practice in training traditional medicine practitioners, bearing in mind consumer protection and patient safety as core to professional practice.

The booklet on the management of the six priority diseases (HIV/AIDs, tuberculosis, malaria, hypertension, diabetes and sickle cell anemia) is intended to:

- Support countries to promote and facilitate continuing education and training in the management of the six priority diseases
- Assist practitioners in upgrading their knowledge and skills in collaboration with providers of conventional care; and relevant researchers through appropriate training programmes
- Support integration of traditional medicine into national health systems

The document outlines strategies for providing interactive training for traditional medicine practitioners with different backgrounds. A brief background of each disease is given followed by its aetiology (causes), epidemiology, signs and symptoms, complications, diagnosis, treatment and prevention and control.

Under the coordination and supervision of the Programme Officer for Traditional Medicine, Dr Kofi Busia, the first stage of the preparation of this booklet was undertaken in a 5-day workshop held in Ouagadougou in 2009, which brought together a group of experts including traditional medicine

practitioners, physicians, pharmacists, pharmacognocists, research scientists and other key stakeholders. The draft was then distributed to about 10 reviewers drawn from the ECOWAS member states.

This document is a product of the comments and suggestions received and the final editorial work, which was carried out by three different experts.

The West African Health Organisation is greatly indebted to all these contributors.

Dr Placido Cardoso
Director General

FOREWORD

Modern scientific practice requires a product or a therapeutic technique to have verifiable evidence of safety and efficacy, which can only be achieved with the active collaboration of all key stakeholders including practitioners, policy-makers and planners, both within and outside ministries of health.

With the growing calls for traditional medicine to be formally integrated into existing national health systems, consideration must be given to issues of safety, efficacy and quality, which are the basis of consumer protection. National health authorities will be required to establish policies and regulatory frameworks to uphold basic standards for the practice of traditional medicine.

WHO Regional Office for Africa, with the support of the Canadian International Development Agency, sought to support its member states to address these issues by developing some generic training modules, guidelines and model protocols on traditional medicine. The modules aimed at enhancing the quality of intervention by Traditional Medicine Practitioners and Conventional Medical Practitioners in the prevention, treatment and management of some priority diseases.

Some support was also provided to some Member States to produce inventories of effective practices as well as evidence on safety, efficacy and quality of traditional medicines, and to undertake further relevant research.

However, based on information gathered from the member states, it has been recognized that there are still a number of countries in the ECOWAS sub-region who have not been able to utilise the WHO/AFRO modules and tools for lack of requisite resources or for their non-specificity. The result is that there are still many traditional medicine practitioners in the ECOWAS sub-region in particular, who lack basic scientific knowledge of disease causation and treatment, although they are consulted by patients on a regular basis and employ modern medical gadgets in their practice.

Guided by these developments and considerations, the West African Health Organisation identified the preparation of this booklet as one of its priority activities.

The booklet aims to ensure that Traditional Medicine Practitioners are equipped with the basic medical knowledge, skills and awareness of the causes, signs and symptoms and herbal treatment of the six priority diseases, namely HIV/AIDs, tuberculosis, malaria, hypertension, diabetes and sickle cell anemia.

It is hoped that the booklet will promote and facilitate continuing education and training in the management of these diseases, and thus encourage rational traditional medicine practice in the ECOWAS sub-region.

Dr Johanna Austin Benjamin
Director, Primary Healthcare and Disease Control

INTRODUCTION

Traditional medicine has served the health-care needs of African populations for centuries, and continues to be the primary, and sometimes the only, accessible health-care option for the vast majority of people living in sub-Saharan Africa.

There is no denying the fact that the introduction of sophisticated, laboratory-based diagnostic and surgical techniques and synthetic pharmaceuticals has made a profound difference in the lives of those who have had access to them. Indeed, for many industrialized nations, life expectancy has improved tremendously as a result, as people have access to better health facilities together with the availability of better sanitary conditions.

However, there still remain a vast number of people around the world, who lack access to quality healthcare and therefore depend on the services of traditional medicine practitioners to address their health problems. There is also evidence that even when health facilities are present, the poor still have a disproportionate access to their services. For example for HIV/AIDS patients, to date only a small proportion of those in need of antiretroviral therapy (ART), and who are eligible for these services are able to benefit from them. Thus despite the increasing availability of ART and other effective medications, the vast majority of Africans people continue to use TM for the treatment of HIV-related conditions and other common diseases, and TM remains the only culturally acceptable and readily available health-care service.

In addition to the above-cited reasons, another frequently explanation given for the viability of traditional healers in many African communities is the lack of adequately skilled and affordable health workers. Moreover, traditional healers continue to endure because they live in the communities they serve, know the people they care for accept payment in kind, take payment for cures rather than medicines, and take a holistic view of the well-being of their patients.

The integration of traditional medicine with modern biomedical practice in Africa, has therefore recently taken on a renewed importance as more comprehensive models of care are being actively sought in response to the devastating impact of conditions such as HIV/AIDS, malaria, hypertension and diabetes on the lives of the people

The problem though is that in spite of the political commitment shown by African governments for the integration of traditional medicine in health systems, a major challenge hindering ongoing efforts is the low literacy levels of traditional medicine practitioners. In general, the majority of traditional medicine practitioners lack knowledge of the basic concepts of conventional medicine, although they regularly treat both acute and chronic diseases, often based on their own own nomenclature of disease as well as their understanding of disease causation. It has, however, been observed that because of a lack of medical training, the potential for misdiagnosis is very high.

Consequently an overwhelming majority of traditional medicine practitioners are willing to improve their medical skills and knowledge to be able to participate in conventional medical programmes and to improve their quality of care, and overall quality and safety of their services.

This booklet, which contains materials required for the training of traditional medicine practitioners in the six priority diseases, i.e. HIV/AIDS, tuberculosis, malaria, diabetes, hypertension and sickle cell disease, aims to assist to them to upgrade their knowledge-base.

The training module on each disease has two main parts. The first part gives a brief background of each disease, followed by the causes, signs and symptoms, complications, diagnosis, treatment and prevention and control. The second part then provides some guidelines on how the module should be delivered, highlighting in particular the tools to be used to facilitate the delivery and the method of assessment.

The information provided in this booklet for the training of traditional medicine practitioners in the six diseases is by no means exhaustive, however, it is hoped that it will serve its intended purpose to facilitate the integration of the sector in national health systems.

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The West African Health Organisation wishes to thank all country representatives whose names are listed in the appendix, for their immense contribution to the preparation of this booklet:

ABBREVIATIONS

AFRO	Africa Regional Office
AIDS	Acquired Immune Deficiency Virus
ART	Antiretroviral Therapy
ARVs	Antiretrovirals
BP	Blood Pressure
FID	International Federation of Diabetes
HIV	Human Immunodeficiency Virus
IUGR	In-utero Fetal Growth Retardation
PLWHA	People Living with HIV/AIDS
PPD	Purified Protein Derivative
SCA	Sickle cell Anaemia
SCD	Sickle cell Disease
STIs	Sexually transmitted infections
TB	Tuberculosis
TM	Traditional Medicine
TMPS	Traditional Medicine Practitioners
UTI	Urinary Tract Infection
WHO	World Health Organisation

DIABETES MELLITUS

Introduction

Diabetes mellitus is a common disorder characterized by persistently high blood glucose levels. It is due to multiple genetic and environmental factors, which result in defects in the action or secretion of insulin thereby causing a disturbance in the metabolism of carbohydrates, fat and protein. Many individuals with diabetes do not complain of symptoms. There is therefore the need to screen all patients (including pregnant women) attending health facilities to exclude diabetes. Type II diabetes is on the increase and is a major public health concern. It is increasing in line with increasing life expectancy, urbanization, sedentary living and the development of obesity. A diagnosis of diabetes is suggested when the fasting whole blood glucose levels is 6.1 mmol/L or more and / or random blood glucose ,takes 2 hours after a meals or 75g glucose load (1.75 g/kg body weight in children) is 10.0 mmol/L or more.

Objectives

1. General: To train TMPs to recognize Diabetes, to case manage Type II and refer Type I
2. Specific: I) To recognize the signs and symptoms of diabetes
 - ii) To identify both types I and II diabetes
 - iii) To recognize the complications of diabetes
 - iv) To identify six symptoms of diabetes
 - v) To prevent the chronic complications of diabetes namely; blindness, limb amputation, kidney disease, nerve damage, strokes, heart attacks and neonatal abnormalities.

Expected Outcome

- TMPs recognize signs and symptoms of diabetes
- TMPs able to relieve symptoms and maintain fasting (4-6mmol/L) and 2-hour post-meal (4-8 mmol/L) blood glucose levels within the normal limits.
- To prevent acute diabetes complications such as hypoglycemia, ketoacidosis and the hyper-osmolar state.
- To recognize diabetes as a treatable but not a curable disease

Target

All TMPs

Trainers

Physicians and other qualified/competent health workers if the condition demands

Contact time

Five (5) days

CONTENTS

Etiology/ Causes

Insufficient, total lack of and/or dysfunction of insulin in the blood

Three common forms of diabetes are encountered in practice:

- Types 1 diabetes-(formerly called insulin-dependent diabetes mellitus) – Juvenile onset
- Type 2 diabetes –(formerly called non-insulin-dependent diabetes mellitus) – adult onset
- Gestational Diabetes (diabetes developing during pregnancy in previously non-diabetic individuals).

Epidemiology

The number of people seeking medical assistance for diabetes is rising in Africa at a time when health experts say the continent's overburdened health care systems are ill-equipped to diagnose the disease and the majority of the poor cannot afford the cost of treatment.

According to the World Health Organisation, an estimated seven million Africans suffer from this disease which is now ranked as the fourth main cause of death in most developing countries.

The International Federation of Diabetics (FID) projects that the prevalence rate will shoot up by 95 percent by 2010 from the current 0,5 to 3 percent range across the continent.

National surveys in most parts of Africa indicate that diabetes cases are on the rise due to rapid urbanisation and fast changing diets which are marginalising traditional ones in favour of the western diets.

In Mali it is estimated that more than 2% of the population, about 200,000 people are suffering from diabetes and 90% of these people suffer from Type II and 10% from Type I.

Niger in 2000 recorded 108,000 people suffering from diabetes. It is estimated that 382,000 people would be affected by 2050 (WHO, 2005).

Pathophysiology

Insulin is produced by the pancreas into the blood stream for the control of blood glucose.

CLINICAL FEATURES

Symptoms

Many patients with diabetes do not have symptoms.

Their diabetes is only detected on screening test.

Patients presenting with symptoms may have the following:

- Polyuria - passage of large amount of urine
- Polydipsia - Thirst and excessive drinking of water
- Polyphagia
- Recurrent boils
- Pruritus vulvae
- Nocturia

Signs

Diabetes does not usually present with any typical signs

- Weight loss
- Foot ulcers
- Septic ulcers

Diagnosis

A diagnosis of diabetes is suggested when the fasting whole blood glucose levels is 6.1 mmol/L or more and / or random blood glucose, takes 2 hours after a meal or 75g glucose load (1.75 g/kg body weight in children) is 10.0mmol/L or more.

Newly diagnosed patient

- Blood glucose (Fasting/Random)
- Urine sugar (Glucose strips)
- Urine protein

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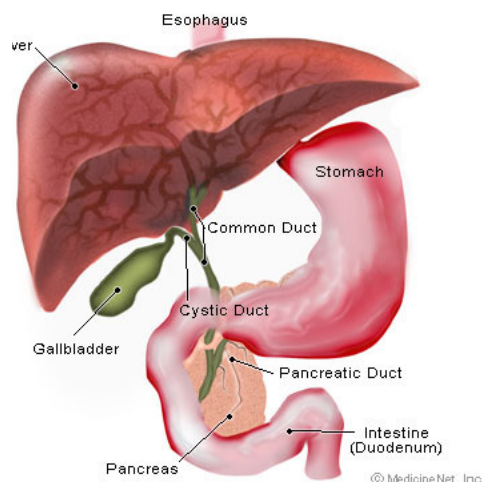


Fig 1: The Pancreas

Risk factors

- Sedentary lifestyle
- Obesity
- Genetic factors/Family history
- Pregnancy
- Hypertension
- Drug treatment hormonal/contraceptives
- Dietary –
- Age
- Large babies

Subsequent monitoring

- Blood glucose
- Urine glucose (Glucose strips)
- Urine protein

Treatment

(A) Non –Pharmacological

In patients who usually have Type 2 diabetes, diet alone should be tried first. When diet fails to achieve satisfactory control, non-obese patients are usually treated with orthodox or herbal medication.

Diet

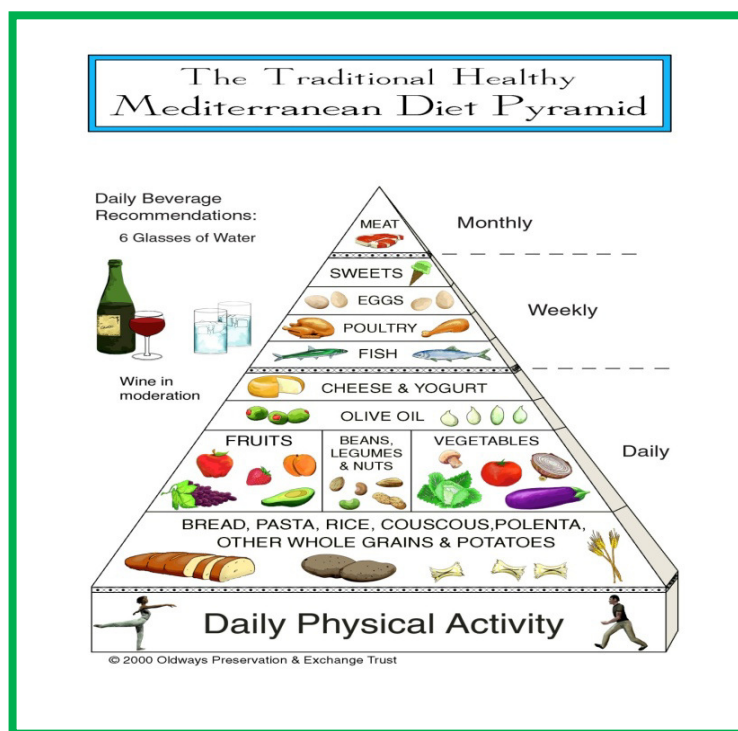
All patients with diabetes require diet therapy. All patients must have individualized meal plans.

In general, patients must avoid

1. 'Free' or refined sugars, such as in soft drinks, or adding sugar to their beverages.
2. Alcohol, tobacco smoking.
3. Dates, sugar cane, pineapple, red plantain, banana
4. Condensed milk, cakes, croissant, ice cream, honey

Most of a day's diet must consist of carbohydrates (60%), protein (15%) and fat (25%) mostly of plant-origin and low animal fat.

The total caloric content (portions) of meals must be reduced and the amount of fiber in the meal increased in those who are also overweight or obese.



What to eat

- i) Fowl/birds: Not the skin
- ii) Fish
- iii) Vegetables
- iv) Whole grain

Exercise

Regular, simple exercise (e.g. walking 45 mins to 1hour daily) is helpful in ensuring good blood glucose control.

All advice on exercise must give consideration to the patient age and the presences of complication and other medical conditions.

Traditional/ Phytotherapy

- i) *Mangifera indica*
- ii) *Momordica charantia*
- iii) *Psidium guajava*
- iv) *Anthocleista nobilis*
- v) *Desmodium adscendens*
- vi) *Vernonia amygdalina*
- vii) *Lippia multiflora*
- viii) *Nauclea latifolia*
- ix) *Tetrapluera tetraptera*
- x) *Catharantus roseus*
- xi) *Bridelia ferruginea*
- xii) *Sclerocarya birrea*
- xiii) *Moringa oleifera*
- xiv) *Zyziphus mauritiana*

***List not exhaustive**

Complications

1. Acute:

- i) Severely elevated blood sugar levels due to an actual lack of insulin or a relative deficiency of insulin:
- ii) Symptoms of diabetic ketoacidosis include nausea, vomiting, and abdominal pain.

Without prompt medical treatment, patients with diabetic ketoacidosis can rapidly go into shock, coma, and even death.

- iii) Abnormally low blood sugar levels due to too much insulin or other glucose-lowering medications: dizziness, confusion, weakness, and tremors.

2. Chronic:

Impotence, foot gangrene/ulcer, poor vision, stroke, heart attack, infertility, large babies, recurrent still births, miscarriages, renal failure.

Prognosis

Good with

- i) Early diagnosis
- ii) regular management

Worse if otherwise

Prevention and Control

Diet soft drinks, which contain a sweetener and not glucose, may however be used.

Avoid risk factors

REFERRAL

- **All pregnant women and children with diabetes** should be referred to a physician with better facilities for further management.
- Persistently poor blood glucose control
- Poor blood pressure control
- Frequent diabetes-related admissions
- Visual impairment
- Foot ulcers or gangrene
- Other chronic complications of diabetes
- Persistent proteinuria

Monitoring and Evaluation

Pre and post training tests

- I) What is diabetes?
- II) What are the causes of diabetes?
- III) How many types of diabetes do we have?
- IV) How do you diagnose diabetes?
- V) What are the symptoms and signs of diabetes?
- VI) How do you prevent diabetes?
- VII) How do you control diabetes?
- VIII) What are the complications of diabetes?
- IX) Is diabetes curable?
- X) When and where do you refer a case of diabetes?

Follow up visits to their clinics

Conclusion:

Diabetes is a chronic condition associated with abnormally high levels of sugar (glucose) in the blood.

The two types of diabetes are referred to as type 1 (insulin dependent) and type 2 (non-insulin dependent).

Symptoms of diabetes include increased urine output, thirst and hunger as well as fatigue.

Diabetes is diagnosed by blood sugar (glucose) and urine testing.

The major complications of diabetes are both acute and chronic.

The objectives can only be achieved by strict blood glucose control and regular screening for diabetes complications. Regular follow-up of all individuals with diabetes is therefore important to assess their metabolic control.

The promotion of appropriate diets still remains a powerful weapon in the fight against diabetes.

Diabetes is a chronic treatable disease but not a curable disease. Insulin cannot be replaced.

Translation of training modules into teaching tools

Unit 1

Concept of diabetes –

What is diabetes (Interactive)

Explain to TMPs how blood sugar is regulated

Insulin production from the pancreas

- Show pictures of anatomical structures

Unit 2

Signs, symptoms and complications:

i) Ants gathering around urine

ii) Tasting of urine

Do they know what risk factors are?

Unit 3

Diagnosis:

Advise to refer patient for blood test

Teach TMPs to use urine glucose strips

Unit 4

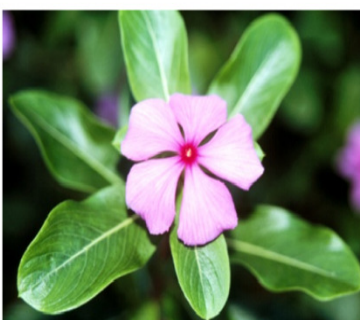
Prevention and Treatment

Facilitator should ask them the methods of treatment

Emphasize on appropriate diet



Lippia multiflora



Catharanthus roseus



Momordica charantia



Tetrapleura tetraptera



Sclerocarya birrea



Moringa oleifera

Fig 2: Some medicinal plants for the management of diabetes

Posology

Generally for decoction, 30 g of dried material in 900 ml of water boil until reduced to 600 ml, 1 teaspoon three times a day.

***Lippia multiflora*:** Infusion: 30 g dried leaves in 600 ml of water; 3-4 teacups daily.

***Momordica charantia*:** Infusion: 30 g dried aerial parts in 600 ml of water; 1 teacup three times daily

***Tetrapleura tetraptera*:** Infusion: about 25 g per day.

***Sclerocarya birrea*:** Dosage according to blood sugar:

Up to 2 g / l: 60 g in 3 doses

Beyond 2 g/l: 100 g in 3 doses and the treatment lasts 7 days

Maintenance therapy is done with a dose of 40 g in 2 doses.

(Reference: West African Herbal Pharmacopoeia, 2013)

Materials required

1. Flip charts and markers
2. Laptop and projector
3. Stationery (paper, pens, pencils etc)
4. Illustrations

HIV/AIDS

Introduction

AIDS is a disease whose causative agent was identified in 1981. All countries in the world have been affected by the disease and remain concerned. Sub-Saharan Africa has been and remains by far the region most affected. This is also where chronic malnutrition is rife that exposes more people to HIV infection.

Unfortunately, there is still no drug that can cure the disease permanently. The drugs available in conventional medicine, however, are able to delay the fatal outcome. But access to these medicines remains very limited due to their low availability and high cost. This partly explains the high number of casualties; of the 3 million deaths worldwide, 2 million are in sub-Saharan Africa (UNAIDS, 2006).

This situation is a consequence of many factors including:

- Poverty;
- Very high levels of Sexually Transmitted Infections (STI);
- Early sex, infidelity; unprotected sex;
- Subordination of women: polygamy, etc.

The management of HIV / AIDS is mainly borne by the practitioners of conventional medicine including diagnosis, treatment with anti-retroviral (ARV) drugs, biological monitoring and prevention. Meanwhile, many traditional medicine practitioners (TMPs) are involved in this treatment and especially in the management of opportunistic infections. In this regard, In Africa, traditional medicines are essential treatment tools for most patients, although they remain largely unexplored and poorly utilised.

Although many healers believe they can cure HIV/AIDS, the evidence however, remains weak. It is therefore necessary to promote collaboration between both conventional and traditional medicine practitioners to contribute to improving the health of the people suffering from this disease. It is in this for this reason that WAHO has developed these training modules for both traditional healers and conventional health professionals. This module deals with traditional healers.

Objectives

General

- Contribute to increasing health coverage by integrating safe effective practices of traditional medicine into national health systems.

Specific objectives

- Improve the knowledge of traditional medicine practitioners in the management of HIV/AIDS;
- Improve collaboration between practitioners of traditional medicine and conventional medicine for the management of HIV/AIDS
- Involve traditional medicine practitioners in the implementation of HIV/AIDS prevention activities;
- Enhance HIV/AIDS prevention campaigns

Expected outcomes

- Clinical manifestations of HIV/AIDS are known;
- HIV/AIDS is better controlled
- Traditional healers are better educated and aware of HIV/AIDS
- Collaboration between traditional healers and conventional medicine is promoted

Target

- Officially identified/organised traditional healers
- Trainers
- Health workers
- Students

Content

Definition

Human Immunodeficiency Virus (HIV) is the germ that causes AIDS. AIDS in turn is the condition of a person whose immune system is weakened, and thus develops one or several diseases called "opportunistic infections". AIDS is the final stage of infection caused by HIV. An AIDS patient would have been infected by HIV, while all persons infected with HIV may not necessarily develop AIDS. People infected with HIV may initially show no signs of illness; they feel good and look healthy.

The virus can remain dormant for years in the body of the 'carrier' without their knowledge and can then infect other people. Only a screening test for the antibodies that the body makes in response to the presence of the virus can confirm that one is a 'carrier'.

Aetiology

What transmits HIV / AIDS?

HIV, which causes AIDS, is present in large amounts in the blood, breast milk and also in sexual fluids of infected persons. The sexual fluids are:

- **In men:** sperm (which leaves the penis during intercourse) and pre-seminal fluid (the "drop" that may arise from erection before ejaculation);

- **In women:** vaginal fluids (which moisten the vagina when she is excited) and amniotic fluid (which surrounds and protects the baby in the womb).

Hence the three routes of HIV/AIDS transmission are through sex, blood and mother to baby. So beware of: scarification, circumcision, excision, shaving (beard, hair, etc.), ear piercing, pedicures and manicures, tattoos, etc.

What does not transmit HIV / AIDS?

HIV does not survive long enough outside the human body. Therefore the actions of everyday life do not transmit HIV.

HIV can neither be transmitted by air nor through saliva, either through food or through everyday contact.

HIV does not spread either by visiting the sick, dishes, glasses, food, handshakes, sheets, clothes and underwear, sneezing or coughing, toilets, etc.

Epidemiology

Today, West Africa is facing a serious HIV/AIDS pandemic. According to the World Bank in 2008, more than five million children and adults were seropositive.

In Côte d'Ivoire, the prevalence rate is 4.7%, Ghana 2.2%, while it is 1.8% in Burkina Faso. In Benin, Gambia, Guinea Conakry, Guinea-Bissau, Liberia, Mali, Nigeria, Sierra Leone and Togo, the prevalence rate varies between 1.2% and 1.5%, while according to the NAC Centres the prevalence rate is between 2.8% and 6.7%. Senegal, Niger and Cape Verde have a prevalence rate below 1%.

Signs and symptoms

How do we recognize that a person has HIV/AIDS?

A person has HIV / AIDS when he/she:

- has prolonged diarrhoea for more than a month
- lose weight significantly,
- has a prolonged and unexplained fever for more than a month
- has general fatigue,
- has persistent cough for more than a month
- presents a generalized dermatitis with scratching,
- has recurrent herpes zoster
- has sores in the mouth, throat or on the body,

In the case of children, in addition to other signs, there is malnutrition, stunted growth (weight of the child is below his normal weight).

Caution: These signs are usually found in many other diseases. However, for AIDS, if these signs appear and do not disappear, the patient in question must be brought to the Health Center for testing of HIV / AIDS.

Risk Factors

In Africa, five key factors have been identified:

- Multiple sexual partners / infidelity;
- Poor risk perception and denial of AIDS;
- Socio-economic subordination of women;
- Poverty;
- Prostitution

Other factors which also play a role in the spread of HIV are:

- Moral decadence.
- High illiteracy
- Resistance to the use of condoms.
- Internal and external migration.
- Early sexual activity of young girls with older partners.
- Prevalence of STIs.
- Stigmatization of PLWHA.
- Insufficient support for PLWHA

Risk Behaviours

Many risk behaviors are also observed. Examples include:

- Using non-sterile syringes for injections,
- Using wounded fingers during sex
- Non-sterile pedicure and manicure set
- Scarification with unsterilized tools
- Circumcision and excision
- Handling placenta with bare hands and, clothes and other instruments contaminated with blood

Diagnosis and complications

Diagnosis is only possible means of conventional medicine

Immune System

The immune system is able to identify foreign elements in our body (called antigen), such as microbes (viruses, bacteria or parasites) or some toxic substances (antigens). It also has a memory, which is able to remember a previous encounter with a foreign substance. Similarly, vaccines can create immunity against serious diseases.

When an antigen is identified, the immune system will develop defenses capable of destroying it. These defenses are formed by the white blood cells.

The immune system will fight against these antigens in several ways:

- By producing antibodies (proteins that would stick to the antigen and destroy it); it is the role of B lymphocytes
- Directly by destroying bacteria: the role of neutrophils.
- By destroying cells infected by viruses: the role of CD8 lymphocytes.

But for the counterattack to take place, it is the role of CD4 lymphocytes to activate the immune response best suited to the antigen. However, they are the ones who are destroyed by HIV. This explains why, when they are missing, the immune system can no longer protect the body against germs that are usually harmless.

Treatment in Traditional Medicine

Current treatments aim to treat AIDS in those who already have and also prevent the HIV infection from progressing to AIDS.

To treat HIV / AIDS, we must already know that the virus is there by testing for HIV antibodies. HIV antibodies are produced in the presence of HIV. So, being HIV positive means you are infected with HIV. This does not mean you have already developed AIDS.

In West Africa, anti-retroviral ARVs for the HIV/AIDS treatment were introduced since the 2000s. ARVs are drugs that block viral replication and can thus enable the patient to live longer. They do not cure AIDS.

In traditional medicine, before commencing treatment of HIV, TMPs are advised to ask patients to visit the health center for testing. It is only when the HIV test is positive, can the TMP begin treatment.

Responsibility of the TMP:

- Inform the patient about the disease for which the drug/treatment is being prescribed;
- Propose possible associations;
- Provide the right medication according to the stage of disease progression;
- Give the sound information related to drug intake;
- Establish and update a register of patients.

Phytotherapy

Spathodea campanulata: Infusion: about 25 g per day

Momordica charantia: Infusion: 30 g dried aerial parts in 600 ml of water; 1 teacup three times daily.

(Reference: West African Herbal Pharmacopoeia, 2013)

Rule of hygiene and asepsis

Traditional medicines must undergo the mandatory rules of hygiene. To do this, the TMP must:

- Remove foreign matter from the remedy
- Dry in a clean environment;
- Wash hands with soap and water;
- Wash the containers for the product;

Prevention and control of HIV / AIDS

Prevention

We can prevent HIV / AIDS through:

- Total abstinence: no sex
- Good mutual fidelity between partners who have the AIDS virus;
- The use of male or female condoms for every casual sex;
- Routine screening of HIV / AIDS, especially when starting a new relationship.
- Avoid contaminated objects

Control

Psychosocial care of persons living with HIV

The psychosocial care is the set of measures to help the person living with HIV or AIDS to find the internal and external resources to enable it to effectively adapt to his situation to be able to live as long as possible a full and productive life.

Who can give support?

Practitioners of traditional medicine, doctors, nurses, laboratory technicians, midwives, members of the family, associations of people living with HIV, etc.

Who should be given care?

- Persons living with HIV or AIDS, and his or her partner
- Family and carers of PLWHA
- AIDS orphan,
- Individuals clinically diagnosed of AIDS,
- Persons with multiple partners
- Groups known to be at risk (drug addicts, prostitutes, homosexuals, etc.)
- Blood donors
- And anyone wishing to know their HIV status.

When should counseling be done?

The counseling should be made before and after testing for HIV / AIDS. It can be done in any place where the patient feels confident.

Qualifications for the psychosocial care

- contain and control his own emotions
- be courteous, patient and precise responses,

- avoid having a childlike attitude, condemn or accuse verbally, or raise false hopes.

How does the psychosocial care?

- The pre-test phase provides the patient full information on where the test can be performed and the availability of screening in the community (anonymous testing and voluntary or health facility).
- The post-test phase- the patient returns to present his results; share with him the experience of the waiting period based on the key points of the pre-test interview.

Several situations may arise:

Negative: The patient is happy, he feels relieved. We must take this opportunity to provide him with information on prevention, encourage him to take precautions so as to decrease the risk of contracting the virus, including: abstinence, faithfulness or, failing that consistent condom use (condoms) and to inform him that the test is to repeated after three months.

Positive: The patient's reactions are more difficult to manage, especially since it must take into account those around him and his family.

The patient's close associates and family may represent both an asset and a handicap to good management of HIV. It is therefore desirable that they enjoy the board-handling, so they can participate positively in the psychosocial care of the patient.

But first seek the consent of the patient.

How to track the person living with HIV (PLWHIV)

The infected patient should not be overlooked. Being infected with HIV for many may be equated to "being sentenced to die." We must educate families to ensure their role of emotional and material support to infected patients. The family, friends or associations, including religious and / or mystics, can provide spiritual support.

No solution is either perfect or universally applied to mitigate the socioeconomic impact of the disease in patients.

It must be noted that any dismissal on the grounds of a person infected with HIV is abusive.

Collaboration between practitioners of Traditional Medicine and Conventional Medicine

The collaboration allows practitioners of traditional medicine, who are also community leaders, to participate actively in the establishment of a consensual framework:

- Know-how to improve psychosocial care of patients;
- A procedure for the identification and validation of products and effective traditional methods.

This consensus is based on:

- the choice of practitioners of traditional medicine by the patient himself;
- diagnosis by a practitioner of traditional medicine which must refer the patient to the doctor;
- confirmation of diagnosis by the practitioner of conventional medicine;
- treatment by a practitioner of traditional medicine;
- the clinical and laboratory monitoring by the practitioner of conventional medicine.

Communication for behavior change for the management of STIs and HIV / AIDS

In terms of HIV / AIDS, we must communicate to inform about the disease and its manifestation, or to adopt responsible behaviour.

To better equip practitioners of traditional medicine, the concepts of communication are essential. Among the animation techniques include chat or group facilitation, advice or counseling (individual interview and counseling), case studies, role playing, etc.

How to inform and advise an HIV patient

- Ensure there is proper diagnosis;
- Inform the patient about opportunistic infections, their effects on the body;
- Assess the patient's knowledge on STIs / HIV / AIDS;
- Explain the modes of transmission to the patient
- Provide information on the possibilities of care;
- Provide information on the possibilities of diagnosis;
- Reiterate your continued support
- Convince him to do his test at the health center for confirmation and support.

Helpful Hints:

- Do not impose your ideas, but rather listen to the group, discuss and negotiate to get one message at a time, speak slowly and clearly pronounce words.

How to organize a meeting of IEC / BCC

There are three stages: before, during and after.

Before: The preparation

- Take stock of situations that warrant the organization of the meeting;
- Identify the expected outcomes;
- Choose the theme;
- Revise the module on the theme;
- Identify the target;
- Choose the day, date and time (other than market days, or having a particular connotation in the middle);
- Choose the place;
- Convene the meeting (by the door to door, mouth-to-ear.)

- Gather education materials.

During: Animation

- Verify and ensure the availability of materials to use;
- Avoid delays - be the first on the scene;
- Have the participants (be aware of the form U or V);
- Introduce themselves and ask participants to do if possible;
- To condition the participants (slogan, etc.)
- From everyday people to the problem;
- Gather experiences and knowledge;
- Correct, inform, guide, educate, and so on;
- Summarize.

After: Conclusion (summarise, thank and promise a future meeting and take minutes of animation).

Things to Remember

1. The AIDS virus destroys the immune system of man. Before its destruction, several years may pass without the manifestation of any signs of the disease. We cannot recognize with the naked eye if a person is infected or not
2. Only by testing for HIV / AIDS (blood sampling) can we know with certainty whether a person is infected.
3. AIDS is the final stage of the disease, manifested by opportunistic infections when the immune system of the person is completely destroyed, and death may occur.
4. The clinical manifestations of AIDS are:
 - Diarrhoea / prolonged fever / cough persistently exceeding one month;
 - Significant weight loss / general fatigue;
 - Generalized dermatitis scratching / recurrent herpes zoster;
 - Sores in the mouth, throat.
5. HIV is transmitted through blood, breast milk and sexual fluids, which are:
 - In men: sperm, and pre-seminal fluid.
 - In women: vaginal fluid, placenta and amniotic fluid.
6. You can get HIV / AIDS when blood or sexual fluids of an infected person come into contact with a wound or mucous membrane of a sexual person.
7. High-risk situations are:
 - Unprotected sex.
 - Any operation that creates a wound on the skin such as scarification, excision, circumcision, pedicure, manicure, hairstyle, injecting drugs, etc.
 - Handling objects soiled with blood or sexual fluids.
 - Blood transfusions with unscreened blood.
8. The defences are:
 - Condoms, fidelity and abstinence, as regards sexual transmission.
 - Use of sterilized or disposable items or personal use only as regards the transmission by blood.

9. Many acts of everyday life do not transmit HIV / AIDS. Thus, by taking certain precautions, we can perfectly live with someone with HIV: sleep, eat, play, work, shower, etc.
10. There is currently no cure for HIV. Antiretrovirals (ARVs) can only slow the evolution of the virus in the body. They are very expensive and are not easily available. However, we can treat opportunistic infections, and help the immune system in its fight against the virus.
11. A pregnant woman can transmit the AIDS virus to her child. She should not breastfeed, and must be very careful during childbirth. But she can also take a preventative treatment for the child to reduce the risk of contamination
12. In Africa most people affected by the AIDS pandemic are sex workers, long distance drivers, but also young people 15 to 24 years, especially young girls.

CONTACT TIME

The training aims to contribute to the acquisition of their knowledge as agents IEC.

The number of TMPs targeted can vary between 30 and 50.

Note that the GST trained as trainers, are chosen by their colleagues when they are grouped in associations.

The training is scheduled to last 06 days:

- 03 days of work in plenary and workshops
- 02 days of simulation sessions
- 01 day for the conclusion of the training session and the presentation of certificates of training

The work in plenary allows the trainer to explain the key issues of the topics of the day. The workshops enable GST to discuss all issues raised by the issues of awareness on the themes of the day.

The simulation sessions are held in 10 workshops including GST.

Assessment

The evaluation of the training takes place through training simulations (simulation exercises) that are driven in turn by each participant in the GST training session.

Each GST must prove his ability to play its role as a trainer with his colleagues who were appointed to represent them in training.

The GST trained as a trainer, is to impart the knowledge acquired to his/her colleagues

Training Tools

The training tools are a package of images / illustrations that are interactive

Conclusion

The training of TMPs must be based on the philosophy of training them without distorting them. Indeed, the TM has its own system, its own logic, and its own rationality which the healers are the custodians. The TMP trained as trainers, are responsible for replication the training received from their colleagues.

The beneficiary TMPs are in turn responsible for educating the people who use their skills. Community mobilization and awareness are the motives by which the GST is entitled to their status as IEC agents and messengers from local communities.

The training of TMPs is a means of reinforcing their capacities and fostering collaboration between conventional and traditional medicine in finding solutions to the HIV / AIDS pandemic. It is recognized today in Asia, as in West Africa that medicinal plants can contribute to improving the health status of PLWHA.

Références

- République du Bénin (2007): *Manuel de formation des praticiens de la médecine traditionnelle sur la prise en charge des IST et du VIH/SIDA*, Cotonou.
- Banque Mondiale (2008) : *Synthèse de la réponse et épidémiologie du VIH/sida en Afrique de l'ouest : implications pour la prévention*, Programme mondial de lutte contre le VIH/SIDA de la Banque mondiale.
- ONUSIDA (2006) : *Rapport sur l'épidémie mondiale de Sida : profils de pays*.

HYPERTENSION

Background/Introduction

Hypertension is a condition in which the blood pressure of an adult aged 18 years or older is persistently higher than 140/90 mmHg in a non-diabetic, or above 130/80 mmHg in a diabetic, based on the average of two or more properly measured blood pressure readings. Hypertension carries an increased risk of early death from stroke, heart attack, heart failure and kidney failure if not properly controlled. Once a diagnosis of hypertension is made, the individual should be monitored regularly and treated for life with non-drug measures, or a combination of this and appropriate medications (Uren *et al.* 2006)

In the majority of patients no specific underlying cause is identified. Such patients are said to have essential hypertension.

In about 10-15% of cases, hypertension may be due to a specific disease or abnormality such as kidney disorders. These conditions are said to cause secondary hypertension.

Objectives

General

- To prevent cardiovascular, cerebrovascular and renal complications by maintaining blood pressure levels of 140/90 mmHg or less (130/80 mmHg or less in diabetics).

Specific

- i) To recognize the signs and symptoms of hypertension
- ii) To identify the two forms of hypertension – essential/secondary
- iii) To recognize the complications of hypertension
- iv) To identify four symptoms of hypertension
- v) To recognize the relationship between hypertension, diabetes and high cholesterol levels.
- vi) To prevent the chronic complications of hypertension namely; blindness, kidney disease, strokes, heart attacks.

Expected Outcome

TMPs recognize signs and symptoms of hypertension

TMPs able to measure blood pressure

TMPs are able to recognize the relationship between hypertension, diabetes and high cholesterol.

TMPs are able to prevent acute hypertensive complications such as stroke, coma and heart attack.

TMPs are able to recognize hypertension as a treatable but not a curable disease

For people who don't have diabetes, the treatment goals for blood pressure are:

- systolic pressure of less than 140mmHg

- diastolic pressure of less than 85mmHg.

For people with diabetes, the goals are:

- systolic pressure of less than 130mmHg
- diastolic pressure of less than 80mmHg.

Target

TMPs

Trainers

Physicians and other qualified/competent health workers if the condition demands

Contact Time

Five (5) Days

CONTENT

Aetiology/Causes

- In the majority of patients no specific underlying cause is identified. Such patients are said to have essential hypertension.
- In about 10-15% of cases, hypertension may be due to a specific disease or abnormality such as stress, kidney disorders. These conditions are said to cause secondary hypertension.

Epidemiology

Around 10 million people in the UK have high blood pressure - that's one in five of them (Uren et al. 2006).

In Africa hypertension is a public health problem with an average frequency of 15 to 40%. Average incidence of hypertension in West Africa is 16% among adults, ranging from 3-30%, from rural to urban setting respectively.

In Ghana it is 4.5% among rural dwellers and more than 13% in the urban areas (Agyeman, 2006). In Guinea the prevalence is 43.6% in the cities and 14.9% in the rural areas (Baldé et al. 2006). It is 25% in Senegal (LP, 2006), It is 23.7% in rural Mali (Maiga, 1989).

Pathophysiology

The heart is a pump designed to force blood through our body. Blood is pumped from the heart through the arteries out to our muscles and organs.

Pumps work by generating pressure. Put simply, too much pressure puts a strain on the arteries and on the heart itself. This can cause an artery to rupture or the heart to fail under the strain - in the worst case stopping altogether.

Blood pressure depends on a combination of two factors:

- how forcefully the heart pumps blood around the body
- how narrowed or relaxed your arteries are.

Hypertension occurs when blood is forced through the arteries at an increased pressure. High levels of cholesterol results in narrowing of blood vessels (Atherosclerosis).

CLINICAL FEATURES

Symptoms

Most patients with hypertension may have no complaint whatsoever.

Occasionally, patients may complain of:

- Headache – not responding to analgesics
- Tinnitus
- Palpitation
- Dizziness
- Easy fatigability

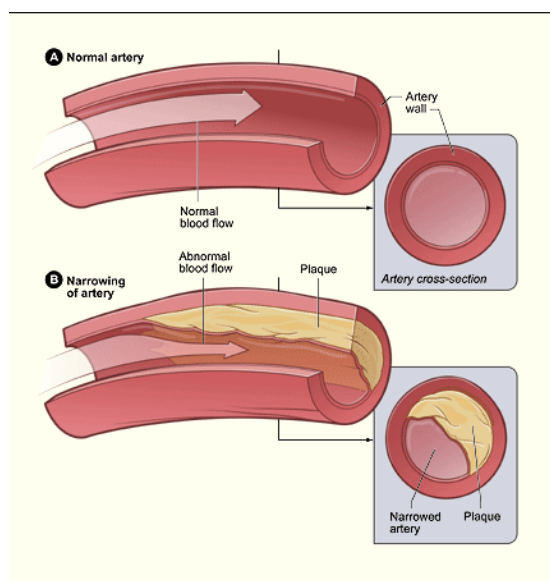


Fig 3: Atherosclerosis

SIGNS

- Persistent high blood pressure of more than 140/90 mmHg on at least two different occasions taken after the patient has rested for at least thirty minutes.
- Signs specific for the various kidney, blood vessel and endocrine disorders that cause secondary hypertension.

Risk Factors

- | | |
|---|---|
| <ul style="list-style-type: none"> • Increasing age, • family history, • obesity | <ul style="list-style-type: none"> • diabetes Type 1 or Type 2 • kidney diseases • Sedentary life/lack of exercise • Steroids/contraceptives • Dietary – high salt/fat |
|---|---|

- excessive alcohol intake
- Smoking.

Diagnosis

- Blood pressure measurement

TREATMENT

Non-Pharmacological

The following changes in lifestyle contribute significantly to reduction in raised blood pressure:

- Low salt intake
- Low fat intake
- Weight reduction in obese and overweight individuals
- Regular exercise in sedentary patients
- Reduction in alcohol consumption and smoking
- Manage stress

These lifestyle changes must be continued even when on treatment.

TREATMENT

Phytotherapy

- *Rauwolfia vomitoria*
- *Bridelia feruginea*
- *Ceiba pentandra*
- *Allium sativum*
- *Persia americana*
- *Lippia multiflora*
- *Taraxacum officinalis*
- *Senna occidentalis*
- *Desmodium adscendens*

***List not exhaustible**

Complications

- Atherosclerosis: narrowing of the arteries.
- Stroke: hemorrhage or blood clot in the brain.
- Aneurysm: dangerous expansion of the main artery either in the chest or the abdomen, which becomes weakened and may rupture.
- Heart attack.
- Heart failure: reduced pumping ability – Pedal edema.
- Kidney failure – periorbital edema.
- Eye damage.

Prognosis

Good: with

1. Early diagnosis
2. Regular management

Worse if otherwise

Prevention and control

Every adult near or past middle age (40years) should 'know their numbers'- ie your height, weight, blood pressure, blood glucose and cholesterol levels.

You should also have regular blood pressure tests if there is a family tendency for hypertension. This way, treatment can be started before any complications arise.

Change your lifestyle:

- stop smoking
- lose weight
- exercise regularly
- cut down on alcohol
- eat a varied diet
- reduce stress by trying different relaxation techniques, or by avoiding stressful situations.

REFERRAL

Refer the following categories of hypertensive patients to an appropriate specialist:

- Those not achieving the target blood pressure level after several months of treatment
- Those with worsening Blood Pressure over a few weeks or months
- Those with diabetes mellitus
- Those with multiple risk factors (diabetes, obesity, family history or heart disease)
- All children, young adults and pregnant women with elevated BP
- History of stroke
- If BP above 160/100 mmHg

Monitoring and Evaluation

1. Pre and post training tests
 - XI) What is hypertension?
 - XII) What are the causes of hypertension?
 - XIII) How do you diagnose hypertension?
 - XIV) What are the symptoms and signs of hypertension?
 - XV) How do you prevent hypertension?
 - XVI) How do you control hypertension?
 - XVII) What are the complications of hypertension?
 - XVIII) Is hypertension curable?
 - XIX) When and where do you refer a case of hypertension?
2. Follow-up visits to their clinics

Conclusion

Hypertension is a chronic condition associated with abnormally high levels of blood pressure.

The two types of hypertension are essential and secondary.

Symptoms of hypertension include headache, dizziness, and easy fatigability.

Hypertension is diagnosed by blood pressure measurement

The major complications of hypertension are both acute and chronic.

The objectives can only be achieved by strict blood pressure control and regular monitoring for hypertensive complications. Regular follow-up of all individuals with hypertension is therefore important to achieve their blood pressure control.

The promotion of appropriate diets and lifestyle change still remain powerful weapons in the fight against hypertension.

Every adult near or past middle age (40years) should 'know their numbers'- ie your height, weight, blood pressure, blood glucose and cholesterol levels.

Hypertension is a chronic treatable disease but not a curable one.

TRANSLATION OF TRAINING MODULES INTO TEACHING TOOLS

Unit 1

Concept of Hypertension –

What is hypertension (Interactive)?

Explain to TMPs about the circulatory system

- Show pictures of anatomical structures

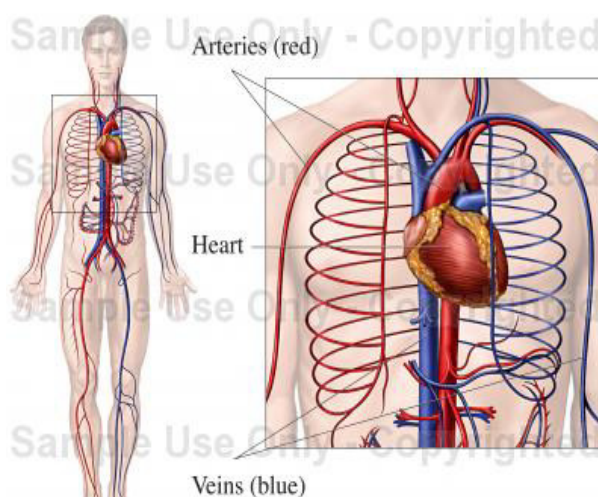


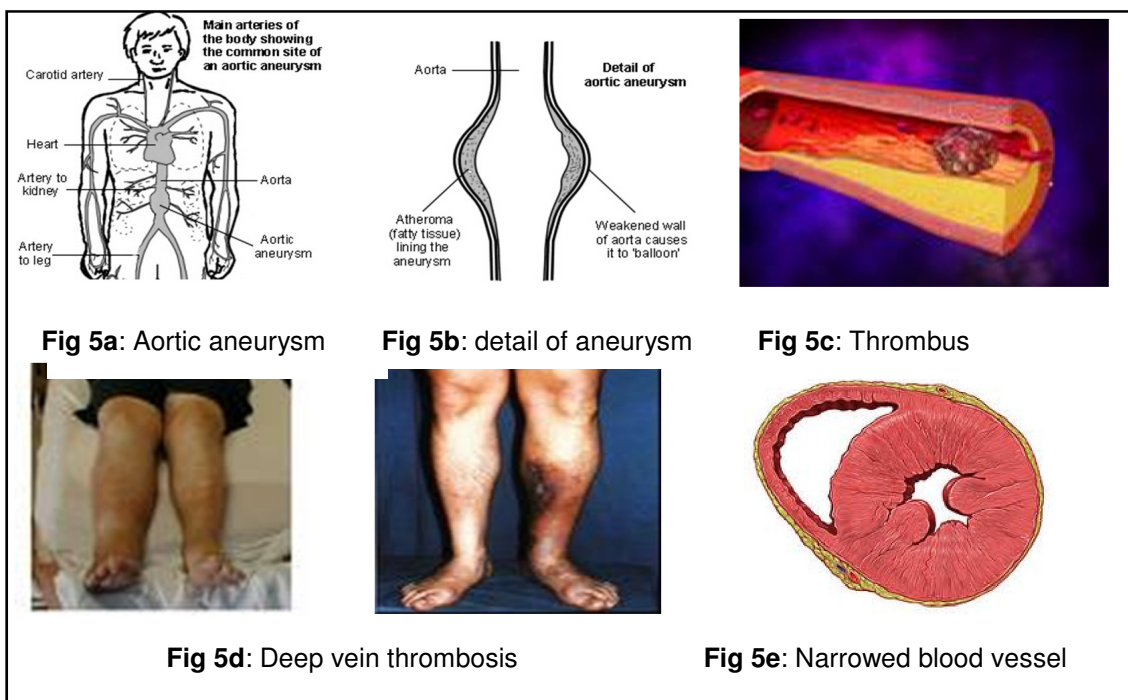
Fig 4: The circulatory system

Unit 2

Signs, symptoms and complications:

- i) Seeing 'flies'
- ii) Tinnitus
- iii) Pedal edema
- iv) Peri-orbital edema

Ask TMPs to enumerate the risk factors of hypertension.

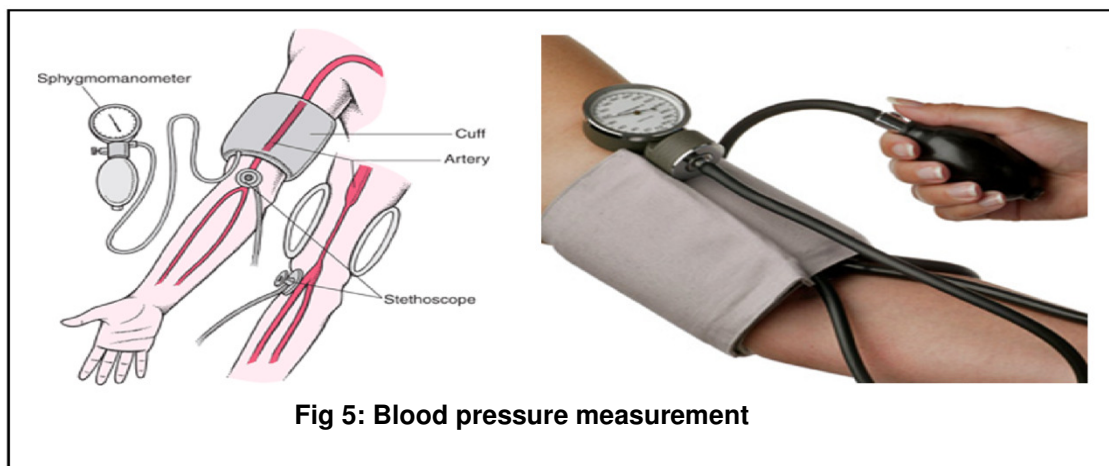


Unit 3

Diagnosis:

Teach TMPs to measure blood pressure

Patient should be asked to rest for a minimum of 30 minutes before blood pressure measurement.



Prevention and Treatment

Facilitator should ask TMPs the methods of treatment

Emphasise on appropriate diet

Quantity of salt – pinch with two fingers 3 times in 24 hours – demonstrate!!!

Refer for regular liver/kidney function tests

Teach TMPs to acquire and measure height and weight of clients

List plants used in treatment of hypertension and mode of administration

***Facilitator should provide local names for the various plants**

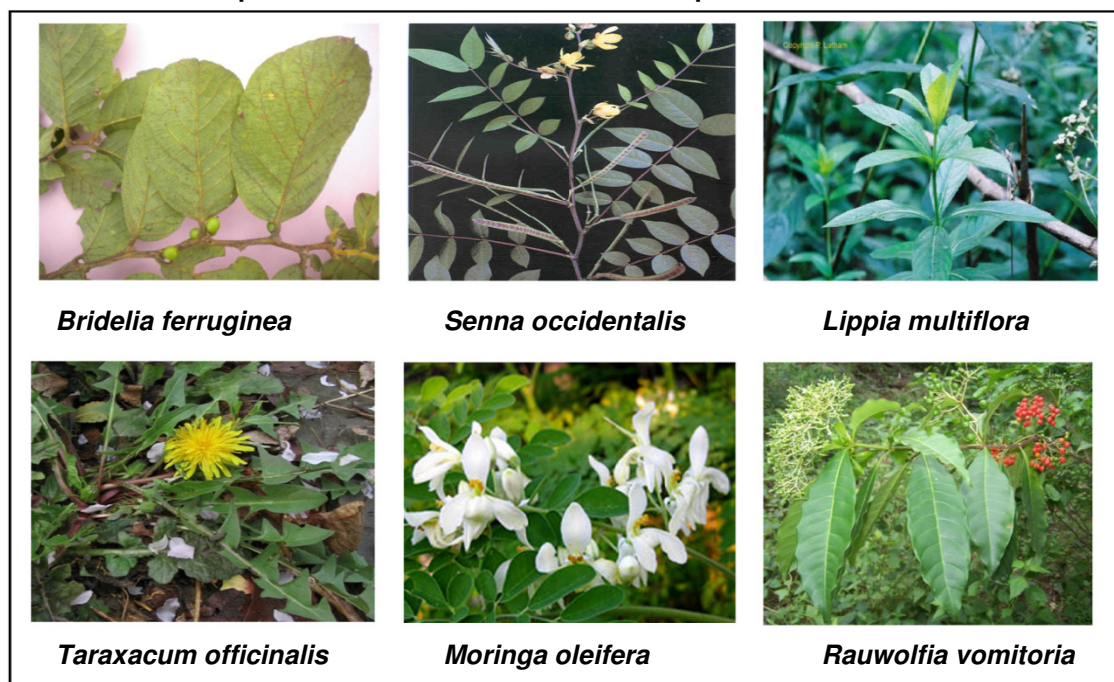


Fig 6: Some medicinal plants for the treatment of hypertension

Posology

***Bridelia ferruginea*:** Infusion; 20 g of dried leaf per litre of water; brew for 15 minutes and take 3-4 cups a day.

Decoction: boil 30 g of dried leaf in one litre of water for 15 minutes; drink 3-5 cups a day

***Senna occidentalis*:** Decoction; 10 g of dried powdered leaves in 500 ml water; 1 teacup two times daily.

***Lippia multiflora*:** Infusion; 30 g dried leaves in 600 ml of water; 3-4 teacups daily.

Moringa oleifera & Rauwolfia vomitoria: Decoction; 30 g dried sliced and chopped roots and rhizome in 900 ml water; simmer until reduced to 600 ml; 1-3 cups daily.

(Reference WAHP, 2013).

Materials required

- Flip charts and markers
- Laptop and projector
- Stationery (paper, pens, pencils etc)
- Illustrations
- Stethoscope*
- Sphygmomanometer – Digital*
- Scale
- Height measure

MALARIA

Malaria is the number one parasite borne disease in all the ECOWAS member states, where a vast majority of the population relies on TMPs for its treatment. The ECOWAS member states have therefore developed national policies for malaria management that are based on prevention and treatment. These include the distribution of treated bed nets and care of the most vulnerable (children and pregnant women). It is therefore crucial that TMPs, who are the main entry points to the management of malaria in West Africa are appropriately informed about the opportunities being provided by conventional medicine to enable them contribute towards the success of malaria oriented national health programmes in their capacities as community leaders.

By imparting to TMPs knowledge on the aetiology, transmission modes, risk factors, signs and symptoms, complications and prognosis, diagnosis, treatment and prevention (prophylaxis) of malaria, it will no doubt facilitate rapid referral of severe malaria cases as well as enhance their collaboration with conventional health practitioners. Moreover acquisition of such knowledge will certainly enable TMPs make better use of the tools that are already available to them for better case management within the setting of their own traditional medicine practice.

Objectives

- ❖ **General objective:** provide guidance for the training of TMP in the management of malaria
- ❖ **Specific objectives:** upon completion of the training, all participating TMPs should be capable of:
 - Identifying the causal agent
 - Describing the transmission modes
 - Describing the main symptoms of severe and simple malaria
 - Describing how treatment is organised under the national health system
 - Identifying prevention methods

Expected outcome

- TMPs are capable of identifying the causal agents
- Transmission modes are described by TMPs
- The main symptoms of severe and simple malaria are described by TMPs
- TMPs can describe the key items involved in the organisation of malaria treatment in the country
- TMPs are capable of identifying prevention methods

Targets

TMPs

Trainers

Physicians, pharmacists, odontologists, assistant pharmacists, nurses, midwives and other health technicians

Content

History

Malaria has been known since ancient times. As far back 3600 years ago, it is believed to have been associated with the floods of the Nile, where the local population was advised to close their homes to the fever provoking vapours. Many folks in the world used to associate malaria with wind, rain, birds, diet, witchcraft etc. It was only in 1889 that the Italian, Golgi was able to identify for the first time, the parasite responsible for the disease. Later, three other parasites were to be identified, all belonging to the same family and transmitted to man by mosquitoes.

Cause and mode of transmission (aetiology)

The causal agent of malaria is a microscopic parasite named plasmodium that exists in four different forms in man (*Plasmodium malare*, *Plasmodium vivax*, *Plasmodium ovale* and *Plasmodium falciparum*). *Plasmodium falciparum* is the most common and is responsible for 80% of cases and 90% of deaths. Malaria is not specific to mankind; there exists similar parasites that affect monkeys, reptiles, rabbits, mice, birds etc. Plasmodium is transmitted to man through the biting of the female Anopheles mosquito. Mosquitoes breed in puddles of stagnant water. The parasite is transmitted to another man through the biting of a carrier by the mosquito.

World distribution (epidemiology)

Malaria affects about 500 million people throughout the world, with a death toll of about a million per year. Majority of victims include

- Under children five year
- pregnant women
- new subjects

Over the past, malaria used to be rampant in all regions of Africa, America, Europe and Asia. It was later on eradicated from Europe and from major parts of America and Asia but is still persistent in Africa where majority of cases are found along with 90% of deaths.

Traditional perception of malaria in West-Africa

Most traditional communities in West-Africa, consider malaria as a disease that is transmitted by spirits, wind, cold, rain and birds.

Some of its manifestations are sometimes associated with omens or attacks by witches.

Malaria is most often classified in several categories depending on the symptoms, whatever the cause of the disease.

Clinical manifestations



Uncomplicated malaria

Fever associated with tiredness, lack of appetite, chills, vomiting

- In children:
 - Elevated body temperature or fever
 - Cold and shivering,
 - Headaches and generalised pain,
 - vomiting and sometimes feeling of tiredness,
 - sweating and chills
 - Loss of appetite refusal to breastfeed

- Pregnant women

Clinical signs of malaria in pregnant women are considered to be severe malaria

Severe malaria and complications

The general signs of severe malaria are:

- Bilious vomiting (yellow)
- Extreme tiredness
- Very dark urine, on rare occasions, of a coca-cola colour
- Agitation
- Sluggishness (prostration)
- Delusion
- Convulsive crises (blurred vision)
- Coma
- Pale coloured palms
- Yellow-coloured eyes
- Blood-steained vomit

Diagnosis

In the health facilities, patients complaining of malaria are interviewed and physically examined.

The interview involves the following:

- Onset of the disease
- Progression
- treatments administered including traditional treatments

Physical examination includes the following:

- temperature
- weight
- height
- blood pressure for adults

The health worker will also take a blood sample for the purpose of biological screening.

➤ *Biological*

Diagnosis is carried on the blood and is based on screening for the parasite responsible for malaria. Only the relevant skilled personnel can interpret results of clinical and biological tests.

Treatment

Objectives of treatment are: to bring the fever down, to reduce other signs and to eliminate the parasites from the body.

All countries concerned have policies based on artemisinin combination combinations for simple malaria and quinine salts for severe malaria. Severe malaria treatment requires intravenous infusion of the medicine. Uncomplicated malaria can be treated by the oral route.

❖ **Traditional treatment**

In many countries phytomedicines belonging to categories I and II are registered and included in the list of essential medicines (e.g. Ndribala, Saye, malarial). Some of the plants that are included in these medicines, are featured in the WAHO Herbal Pharmacopoeia: *Morinda lucida*, *Guiera senegalensis*, *Senna occidentalis*. Others are *Tinospora bakis*, *Combretum micranthum*, *Khaya senegalensis*, *Cymbopogon citratus*, *Carica papaya*, *Crysospterix febrifuga* and *Cryptolepis sanguinolenta*.

Prevention

The objectives of prevention are:

- To avoid contact with the mosquito; treated to avoid the breeding of the mosquito in the immediate environment by improved sanitation measures. To reduce susceptibility in vulnerable people.
- Administer appropriate medicines to pregnant women and those people travelling to endemic areas.

Time of exposure

4 hours for theory and 4 hours practicals.

Evaluation

Evaluation will be both theoretical and practical.

Theoretical evaluation is conducted based on pictures:


- for the causal agent, the picture of mosquito to be recognised amongst other insects,
- for the transmission mode, pictures depicting a genuine transmission, a witch, wind, birds, people kissing one another, greeting each other, having sex and the TMP should indicate the picture that is the right answer.
- for symptoms, pictures showing a patient feeling cold, muscle pains, vomiting, and having diarrhoea and the TMP should be able to identify the signs of the type of malaria. He could also be asked to select among a set of pictures, three depicting symptoms of simple malaria (the same also applies to severe malaria).

- for treatment: show the TMP clinical cases of simple malaria and severe malaria and ask him the procedure to follow.
- for prevention: identify from pictures prevention methods relating to the use of treated bed-nets,
- Prophylaxis in a pregnant woman and the use of insecticides.

For practical evaluation: carry out simulations of practical cases.

Translation of modules into tools

The idea here is to provide a graphic translation of aspects related to the causal agent, modes of transmission, main signs and methods of prevention. The trainer will make sure there is proper interaction with the TMPs.



The image contains six photographs of insects arranged in a 2x3 grid. The top row shows a red bug with black markings on its back, a mosquito with its proboscis inserted into a human arm, and a yellow and black striped wasp. The bottom row shows a mosquito with its proboscis inserted into a human arm, a dark brown beetle, and a black ant.

Question: Which of these insects represents a mosquito?

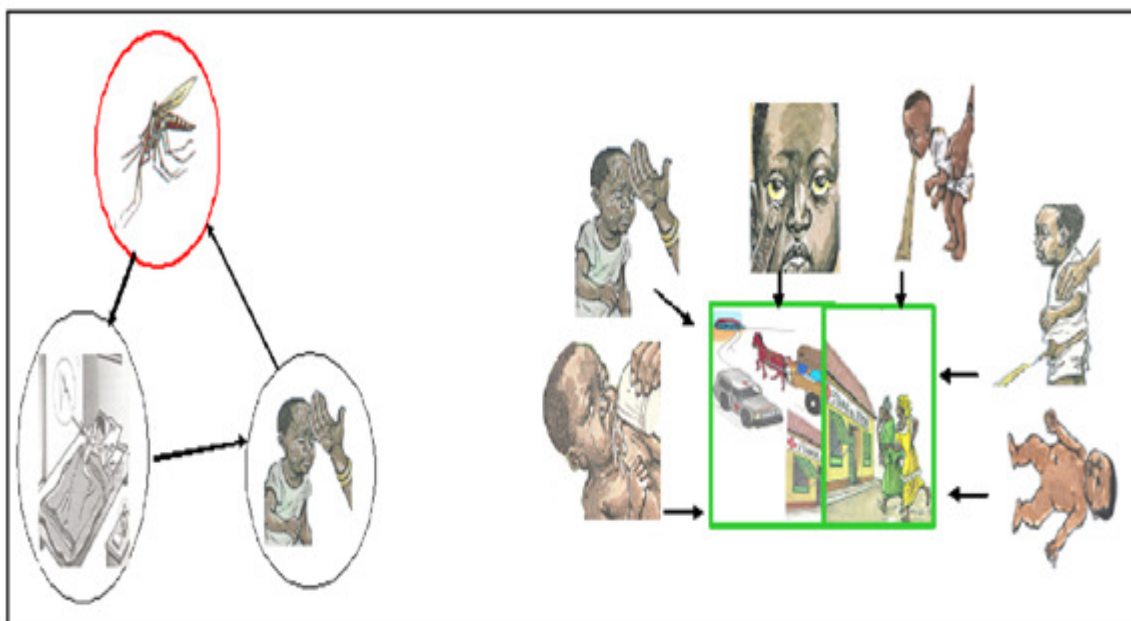


Fig 7: Signs and symptoms of malaria

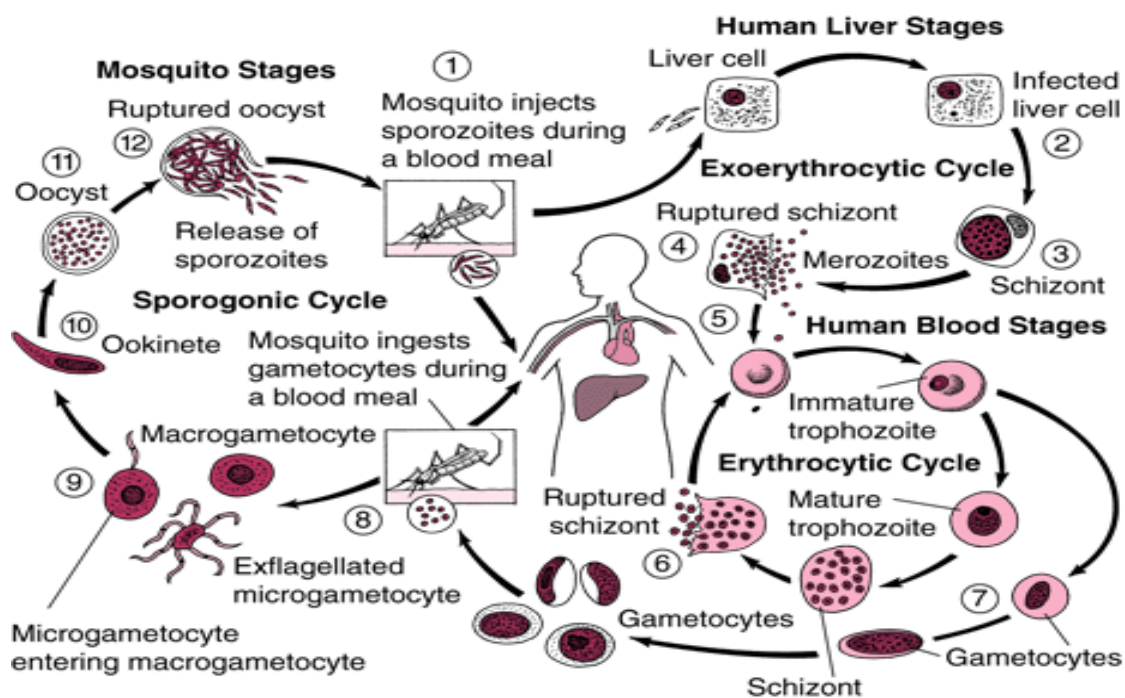
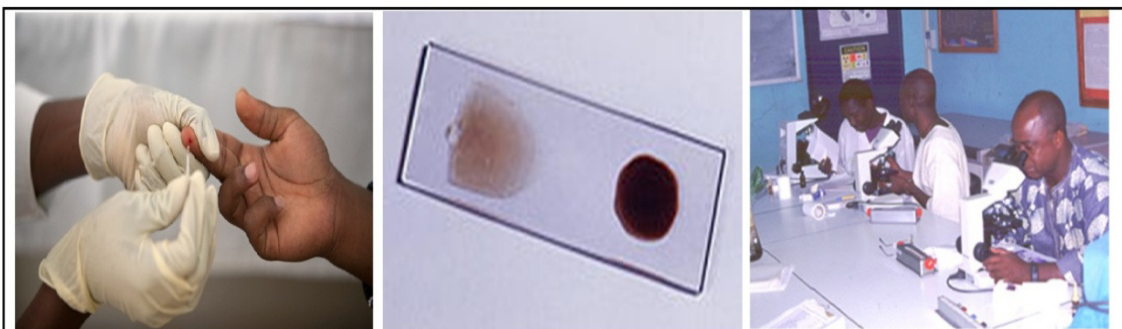
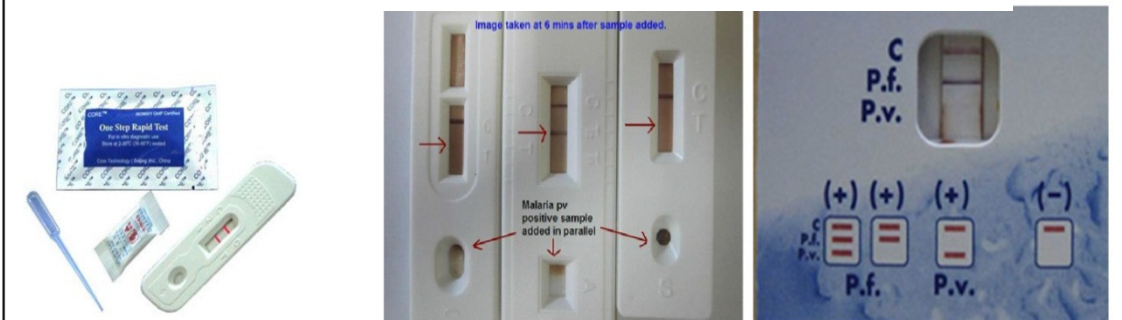


Fig 8: Life cycle of the plasmodium parasite



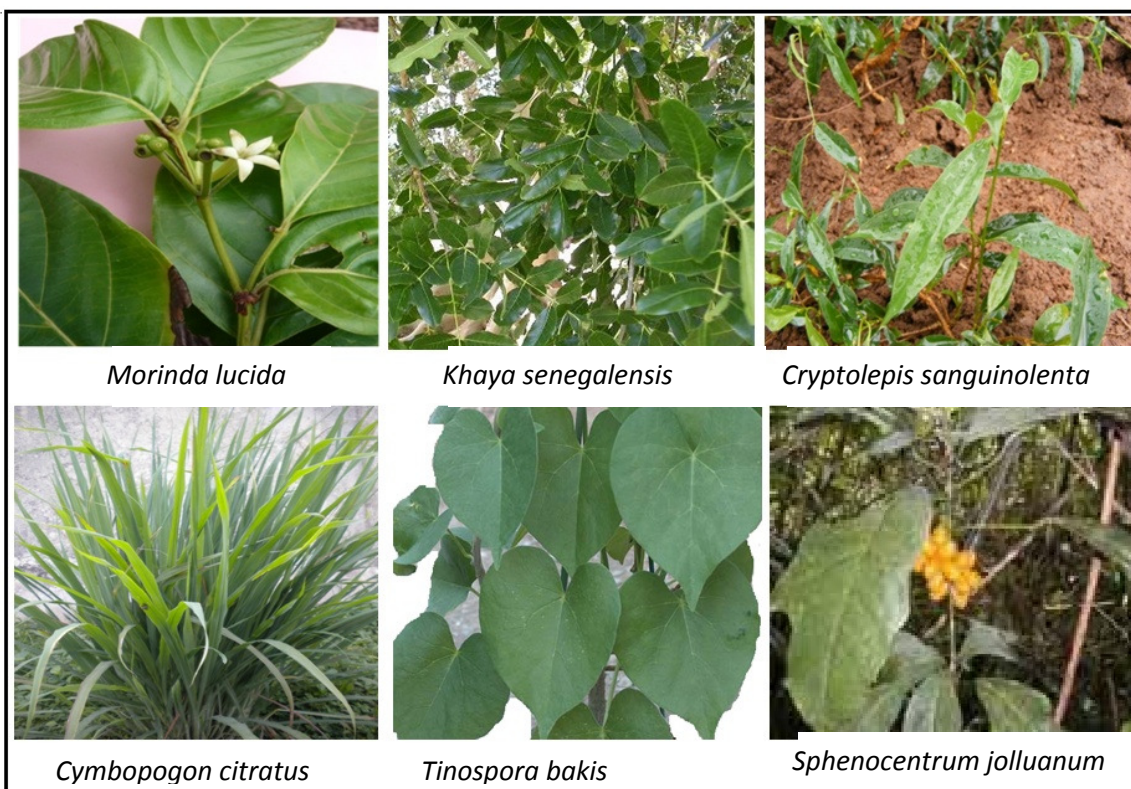
Routine laboratory testing for malaria



Rapid diagnostic test kits for malaria



Question: Which is the best sleeping method in malaria endemic regions?



Posology

Generally for decoction: 30 g plant material in 900 ml water; simmer until reduced to 600 ml; 1 teacup three times daily

***Cryptolepis sanguinolenta*:** Infusion; 2.5 g teabag of root bark soaked in 150 ml (1 cup) of boiling water; steep for 5-10 minutes. Decoction: 40 g per litre of water, 3-5 teacupfuls daily.

***Cymbopogon citrates*:** Infusion; 30 g dried herb in 600 ml of water; 1 teacup three times daily.

***Tinospora bakis*:** Decoction; 200 gm of powdered plant material boiled with 1000 ml of water until reduced to 600 ml. Take two tablespoonfuls twice daily.

(Reference: WAHP, 2013)

SICKLE CELL DISEASE

Introduction

Sickle cell anaemia (or anaemia, SCA) or “drepanocytosis” is an inherited blood disorder characterized primarily by chronic anaemia and periodic episodes of pain. It is caused by an inherited abnormal haemoglobin (an oxygen-carrying protein within the red blood cells), which produces distorted (sickled), fragile and rupture-prone red blood cells.

It is a major public health concern in sub-Saharan Africa. Sickle cell disease is a hereditary disorder transmitted from parents to their offspring. Because of the absence of a cure for sickle cell disease in conventional medicine, TMPs have a crucial role to play in the care of patients (prevention and treatment of seizures). TMPs sometimes provide with considerable success, treatments that prevents or help patients deal with the crises. Moreover, improved diagnostic and treatment methods in conventional medicine particularly in dietetics, now allow doctors to provide patients with better care and useful information. It is therefore important that TMPs and doctors collaborate to exchange as much information on this disease as possible to improve the methods of prevention and treatment as well as provide the best care possible to every patient. Such collaboration is also essential for the scientific evaluation of the quality, safety and efficacy of traditional medicines.

General Objective

To train the trainers of TMPs in the management of sickle cell disease

Specific objectives

At the end of the training all participants must be able to:

- List the main types of sickle cell trait
- Describe the method of transmission of sickle cell trait
- List the main factors that trigger the crisis of sickle cell
- Recognize the key signs of the crisis and sickle cell syndrome
- Describe the principles of caring for patients with sickle cell
- List the main elements of a healthy diet for sickle cell patients

Expected outcomes

1. TMPs know the main types of sickle cell trait
2. TMPs can describe the method of transmission of sickle cell trait
3. TMPs know the main factors that trigger sickle cell crisis
4. TMPs know the major signs of the crisis and sickle cell syndrome
5. the principle of caring for patients with sickle cell is described by the TMP
6. key elements of a healthy diet for sickle cell patients are known to TMPs

Targets

TMPs

Trainers

Doctors, pharmacists, dentists, pharmacists, nurses, midwives, medical herbalists and other health professionals.

Content

Cause and method of transmission (aetiology)

Sickle cell anaemia (or anaemia, SCA) or "drepanocytosis" is an inherited blood disorder characterized primarily by chronic anaemia and periodic episodes of pain. It is caused by an inherited abnormal haemoglobin (an oxygen-carrying protein within the red blood cells), which produces distorted (sickled), fragile and rupture-prone red blood cells. The sickling reduces the red blood cell's oxygen carrying capacity. When not receiving enough oxygen, the red cell becomes elongated and cannot easily pass through small blood capillaries, causing pain.

The triggering factors are: cold, moisture, oxygen deprivation, dehydration.

Sickle cell disease is passed from parent to child. If a parent has and the other does not, 50% of children may have the disease. If both parents have the gene, 75% of children may have the disease.

This is why some communities discourage marriages between two people with the disease.

Distribution in the world (epidemiology)

Nearly 120 million people worldwide are carriers of sickle cell. According to the WHO over the next decades the number of carriers of abnormal haemoglobin should stabilize at about 8% of world population. Sickle cell disease occurs mostly in blacks or in the offspring of blacks, but may sometimes occur in whites, especially those around the Mediterranean.

Approximately one fifth of those who carry the trait of the disease may present symptoms. The incidence in Africa varies from 8-15% sometimes 20 to 30%.

Traditional Perceptions of Sickle Cell Disease

Most local people perceive the disease as caused by mystic and other esoteric factors. It is commonly called "bone ache" in many languages across West Africa such as in Susu (Sierra Leone and Republic of Guinea), Yoruba (South West Nigeria and Benin Republic). Children affected by this disease are occasionally referred to as "abiku" or "born to die" in some societies. Although the genetic nature of the disease may not be known to indigenous populations, they have always insisted on not allowing marriage between families with children dying early of "bone ache" and their "normal" non-symptomatic children. This is indicative of their perception of the genetic nature of the disease though not scientifically expressed.

Clinical Manifestations

Clinical Features of SCD

Pathological Features: SCD is characterized by cellular dehydration, haemolytic anemia, acute chest syndrome, acute splenic and hepatic enlargement, joint necrosis, tissue damage and organ failure.

Signs and symptoms: The signs and symptoms of SCD include vaso-occlusive pain episodes, enlarged marrow and associated abnormal physical features, chronic anaemia, pulmonary hypertension, leg ulceration, isosthenuria (inability to concentrate urine).

Main presenting complaints: fever, cough, severe chest pain, asthma, bilateral painful and swollen hands/feet in children

Risk Factors: decreased oxygen tension, high temperature and acidic pH

Complications

- Priapism leading to impotence
- Circulatory collapse
- Stroke

Diagnosis

Apart from the findings common to all haemolytic anemia, the diagnosis is based on the detection of haemoglobin S. This can be done:

- by microscopic observation of fresh blood smear, with or without addition of a reducing agent (potassium metabisulfite, ascorbic acid): one sees the homozygous red cells becoming sickled and those of 'heterozygous holly leaves (the crystallization of haemoglobin S deforms the membrane),
- by electrophoresis of the hemolysate of red blood cells show, in the homozygote, a single band of haemoglobin migrating abnormally slowly, and in the heterozygous presence of two bands of haemoglobin, which is faster (A hemoglobin and the other, hemoglobin S).

Now tests can detect healthy carriers (people who have the heterozygous allele but not sick) In industrialized countries, the diagnosis is in neo-natal period when parents are at risk. In non-industrialized countries, the diagnosis is often the first manifestation or complication. Neo natal screening could lead to improved prognosis.

Treatment

The treatment of sickle cell disease is based on:

- treatment of vaso-occlusive crisis: analgesics (opioidsp) and oxygen therapy;
- prevention of the triggers of crises (cold, altitude, infections, dehydration);
- folate supplementation;
- preventive treatment of pneumococcal infections and meningitis;

- blood transfusion in cases of severe anaemia or severe infection.

Hydroxyurea, currently being used in adults and children with severe pain, acts by increasing the amount of foetal haemoglobin (a form of haemoglobin resistant to sickling of the red blood cells) in the blood. It is expensive and has variable and unpredictable effects; can be toxic to the bone marrow.

The prevention of pneumococcal infections in young children is by vaccination.

Blood transfusions may reduce considerably the risk of cerebral-vascular accidents particularly in some at risk children (abnormal trans-cranial Doppler).

- Standard treatment of anaemia when the Hb levels <6g/dl with or without signs of intolerance, transfusion is indicated. In sickle cell disease is the transfusion of packed red blood cells 10-15mg/kg
- Before the painful crises:
- Patient should have enough rest
- Rehydrate the patient by drinking a lot of water or parenterally.
- Analgesics, anti-inflammatory drugs, vasodilators, anti spasmodic
- Before infections: antibiotic therapy
- Symptomatic pain management, blood transfusion etc.

Preventative, anti-sickling agents eg hydroxyurea cannot be tolerated by some patients due to adverse effects

Traditional Treatment

There is presently no effective cure. Treatment may be

- Supportive-education, empowerment
- medicinal plants

Some of these plants are *Zanthoxylum zanthoxyloides*, *Hymenocardia acida*, *Calotropis procera*, and *Khaya senegalensis*,

Prevention

To avoid crises it is recommended to follow the following simple measures:

- frequently drink water
- Stay in a well-ventilated room
- stay warm
- Maintain steady weight
- eat foods rich in iron, or facilitate the absorption of iron (red meat, liver pate)
- Avoid catching cold, or more generally avoid possible respiratory infections
- Wear clothes that do not disrupt the circulation
- avoid going over 1500 meters altitude

- Avoid extreme heat exposure•

CASE OF THE PREGNANT WOMAN

Recommendations for the management of pregnancy in women with major sickle cell syndrome. Sickle cell disease increases the risk of obstetric complications, and pregnancy encourages the development of complications of sickle cell disease. Risk of maternal complications: hypertension and pre eclampsia, thromboembolic disease, infectious (UTI very frequent).

The foetal risk is important; fetal death in-utero, fetal growth retardation (IUGR), prematurity. The acute complications of sickle cell disease are likely to occur with greater frequency, especially the vaso-occlusive crises, acute chest syndrome, or worsening of anaemia in which the impact is both maternal and fetal.

Ectopic pregnancy possible

Close cooperation between different stakeholders is essential and team training is necessary. Indeed the reduction of risk through close monitoring, preventive measures and early treatment of complications is crucial.

Contact time

Theory: 6 hours and 4 hours for practicals.

Assessment

The evaluation will be based on the specific objectives.

Translation of the module into training tools

Use of images and diagrams of normal red blood cells, anaemia, blocked blood vessels, patients with joint pain, illustration of a family tree to show how the gene is inherited. The trainer will ensure that the training is interactive



Fig 9: Joint pain associated with sickle cell anaemia

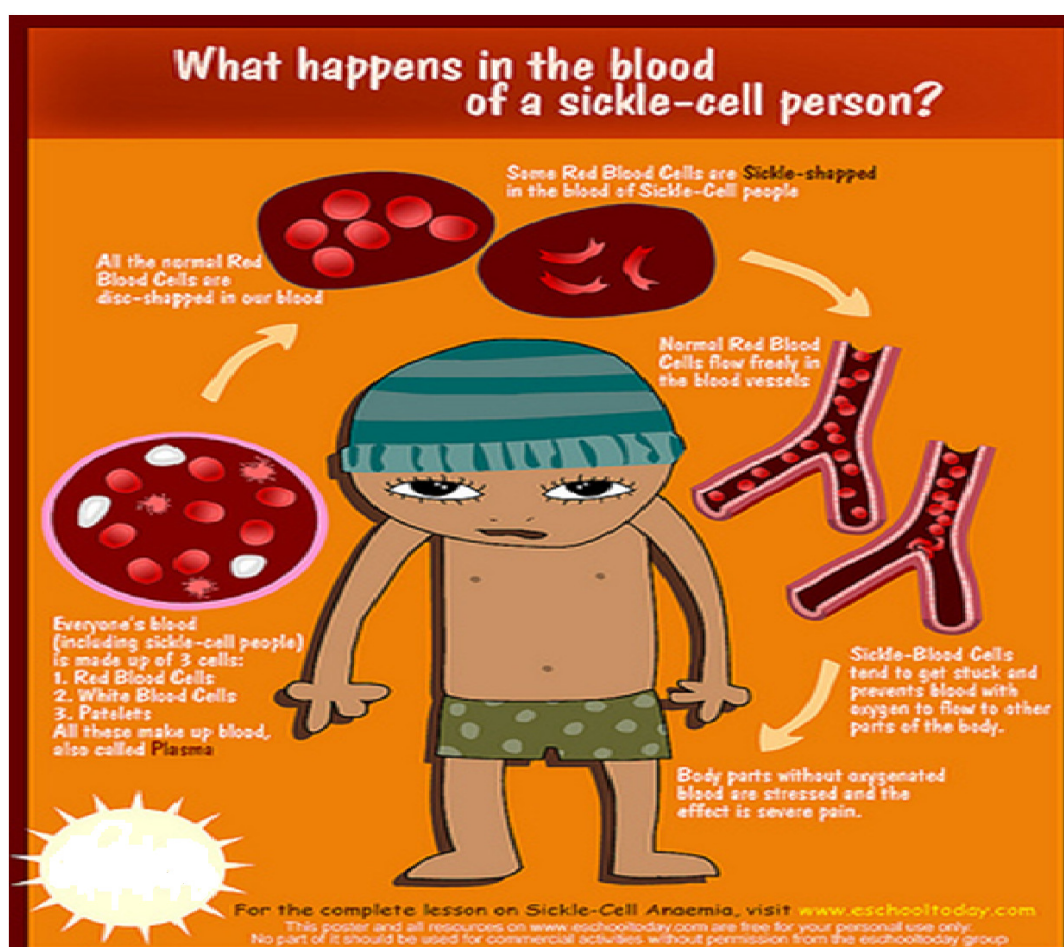
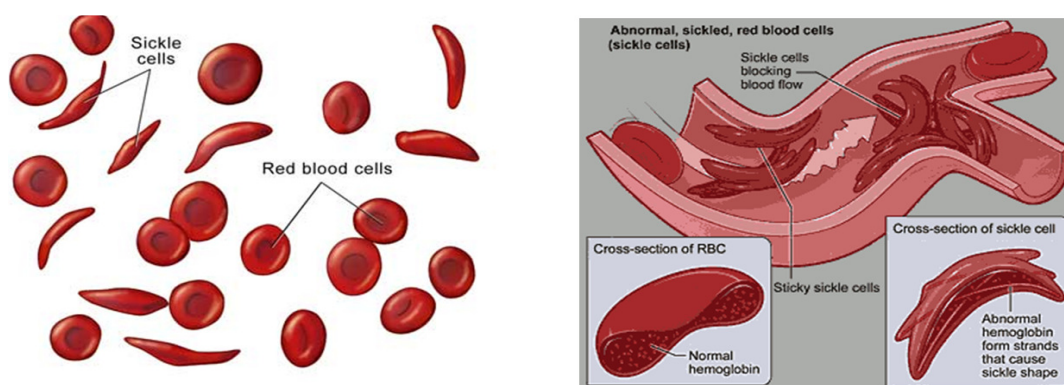
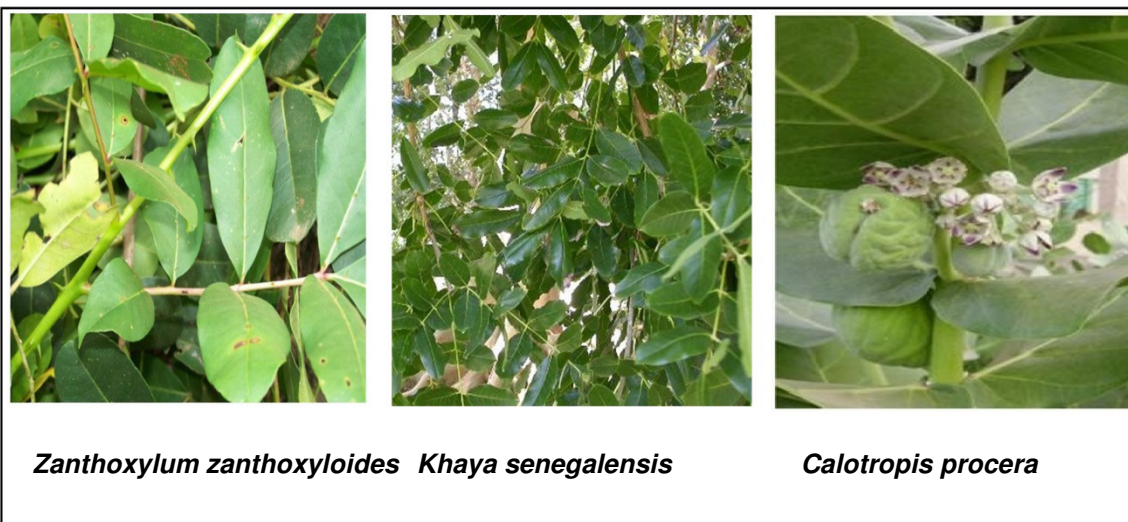


Fig 10: Pathophysiology of sickle cell anaemia



Fig 11: Genetic crossing showing the possible inheritance of sickle cell anaemia by couples



Posology

Hymenocardia acida: Decoction; Boil about 90 g of leaves in 500 ml water for about 30 minutes. Take 1 cup (about 75 ml) 3 X per day (per-os).

Zanthoxylum zanthoxyloides: Decoction; 1-2 teaspoons of bark in 150 ml of water and simmer for 10-15 minutes; 1-3 teacupfuls a day.

Liquid extract: 1:1 in 45% alcohol; 1-3ml three times a day

For the others, generally, for decoction: 30 g plant material in 900 ml water; simmer until reduced to 600 ml; 1 teacup three times daily.

TUBERCULOSIS

Introduction

Tuberculosis is an infectious, communicable and unlike measles is not immunizing. Pulmonary tuberculosis is the most common form. It is most often caused by a microbe called *Mycobacterium tuberculosis* or *Mycobacterium tuberculosis* (BK). TB is spread mainly from person to person by breathing infected air during close contact. A person can become infected with TB bacteria by inhaling small particles of infected sputum from the air. The bacteria get into the air when a patient with a TB infection coughs, sneezes, shouts, or spits. TB cannot be contracted by merely touching the clothes or shaking the hands of an infected person. It is the third leading cause of death from infectious disease worldwide, affecting mostly people living in poor conditions, particularly in sub-Saharan Africa.

The risk of disease occurrence is high among low socio-economic groups. Because of the frequent occurrence of relapses (emergence of multidrug-resistant modern treatment) and the fact that it is one of the opportunistic infections of HIV/AIDS, pulmonary tuberculosis remains a public health concern in Africa and is responsible for many deaths.

Teaching Objectives

At the end of the training, skills and competences of TMPs in the management of tuberculosis are improved.

Expected outcomes

TMPs must be able to:

- List the signs of pulmonary tuberculosis,
- Refer suspected cases to the appropriate treatment Centers
- Encourage the patient to comply with orthodox treatments,
- Be involved in the implementation of community-based initiatives for the prevention of tuberculosis and early detection of HIV/AIDS.

Targets

TMPs

Trainers

- TMPs
- Medical herbalists

Core team of district health workers

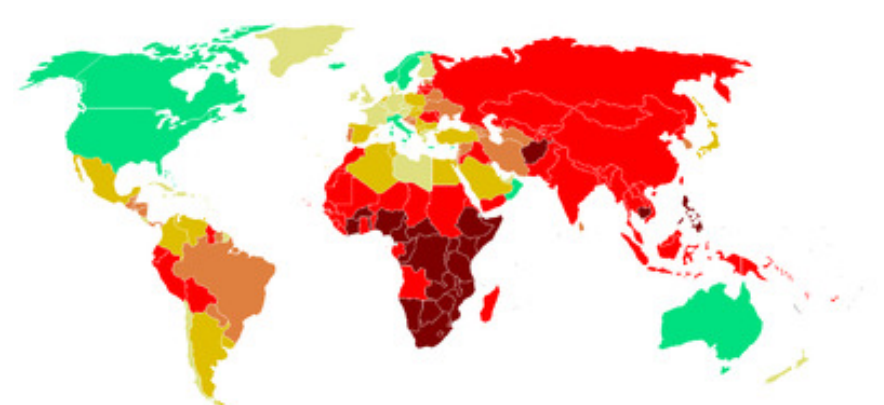
- Head nurses
- Other actors in the fight against tuberculosis

History / Etiology

Tuberculosis can be caused by different bacteria:

- *Mycobacterium tuberculosis* (tubercle bacillus), the most common
- *Mycobacterium bovis*
- *Mycobacterium africanum*
- *Mycobacterium canetti* (mainly to Djibouti)

Epidemiology



The annual number of new cases worldwide is approximately 5.4 million (2006) and causes approximately one million deaths according to the World Health Organization (WHO). The incidence of the disease remains very high in Africa, at about 13% as against less than 1% in Asian countries.

It is common among users of intravenous drugs and HIV patients. Malnutrition and drug abuse are recognized causes of increased cases.

It is essentially an infection that affects young adults, and men are nearly twice more affected than women.

In Côte d'Ivoire: The number of cases is increasing annually by about 3.5%. The incidence of reported cases was 116 cases per 100 000 inhabitants in 2007. In 2007, 23 383 TB cases were detected of which 14 071 were new cases

Mode of transmission

TB is spread mainly from person to person by breathing infected air during close contact. A person can become infected by inhaling small particles of infected sputum from the air. The bacteria get into the air when a patient with a TB infection coughs, sneezes, shouts, or spits. This produces droplets containing the microbe whose number may reach 3,000 each time the patient

speaks, coughs, sneezes or sings. These droplets can remain suspended in the air for a long time. Exposure to sunlight destroys TB parasite in five minutes, but it can survive several hours in the dark.

These droplets are so fine that they penetrate the bronchi and penetrate deeply to the alveoli where the parasite will multiply.

Clinical Manifestations

All organs can harbour the bacterium but the lungs provide the best conditions for its multiplication. That is why clinical signs are dominated by pulmonary manifestations.

The disease progresses in two phases:

- a phase marked by early signs of impregnation or TB with accompanying fever at night
- weight loss (weight loss ranging beyond 10 kg)
- asthenia (fatigue)
- anorexia (poor appetite)
- amenorrhoea (absence of menstruation) in women
- night sweats
- a late phase where cough is the main sign. It is a chronic cough for more than three weeks with muco-purulent sputum or bleeding accompanied by chest pain and signs of tuberculous impregnation

The Risk Factors

The main risk factors for tuberculosis:

- poor nutritional status (malnutrition)
- socio-economic status (poverty, armed conflicts, immigration)
- poor housing conditions (crowded)
- Negative social habits (alcoholism, smoking, substance abuse)
- diseases with decreased immunity such as AIDS and diabetes,
- poor hygienic conditions.

Complications

Complications may arise when the disease spreads to other organs such as bone, kidney, liver, brain and heart.

Diagnosis

Positive diagnosis

The diagnostic process includes:

- finding a descriptive epidemiological context (TB contagion, low socio-economic, etc.)
- X-ray examination of the lungs. Sometimes the chest X-rays can reveal evidence of active tuberculosis pneumonia. Other times, the X-rays may show scarring (fibrosis) or hardening (calcification) in the lungs, suggesting that the TB is contained and inactive. Examination of the sputum on a slide (smear) under the microscope can show the presence of the tuberculosis-like bacteria

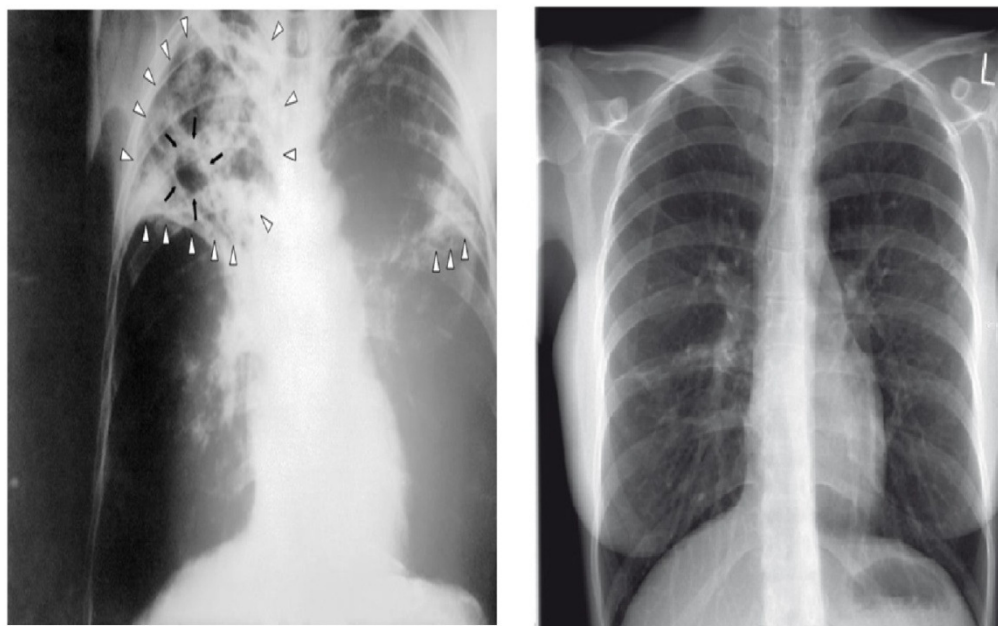


Fig 12: Radiograph of a patient with bilateral pulmonary tuberculosis in an advanced stage

- Light emitting-diode fluorescence microscopy (LED-FM), a type of smear microscopy, is more sensitive than the standard Ziehl-Neelsen AFB stain. This test is faster to perform and again may help identify patients in need of therapy quicker.
- Several types of skin tests are used to screen for TB infection. These so-called tuberculin skin tests include the Tine test and the Mantoux test, also known as the PPD (purified protein derivative) test. In each of these tests, a small amount of purified extract from dead tuberculosis bacteria is injected under the skin. If a person is not infected with TB, then no reaction will occur at the site of the injection (a negative skin test). If a person is infected with tuberculosis, however, a raised and reddened area will occur around the site of the test injection. This reaction, a positive skin test, occurs about 48-72 hours after the injection. When only the skin test is positive, or evidence of prior TB is present on chest X-rays, the disease is referred to as "latent tuberculosis." This contrasts with active TB as described above, under symptoms.

Differential Diagnosis

The differential diagnosis of tuberculosis is made with:

- Lung infections (pneumonia, bronchitis, etc.)
- Pulmonary tumors (lung cancer)

Conventional treatment of tuberculosis

Treatment of TB is available free, 6 months for new cases detected and 8 months old and is mainly in specialized centers.

The goal of treatment is to cure the sick to break the chain of transmission of the disease. It includes 2 months of quadruple (4 antibiotics) and then 4 months of dual therapy (2 antibiotics).

TMPs must support the patient to comply with the treatment thus:

- Ensuring that the patient takes their medication regularly,
- Respect the duration of treatment
- Check drug stocks remaining
- Monitor compliance with appointments

Herbs:

There are plants that improve the nutritional status of patients and others which can strengthen the immune system of patients. Some of these plants includes *Lawsonia inermis*, *Aloe vera* and *Allium sativum*

Prognosis

The disease can be treated effectively if the patient follows the proper treatment. Untreated, the disease is fatal in over half of cases. In nearly 25% cases the disease progresses to chronicity.

Prevention and Control

BCG vaccination- can protect newborns against tuberculosis,

Hygiene measures

TMPs can contribute to prevention and control by advising patients and others to: cover mouth and nose with a clean handkerchief when coughing,

- avoid spitting,
- spit in a box with a lid containing bleach,
- sleep alone if possible during the first month of treatment in a well ventilated room,
- avoid intake of tobacco or alcohol

Social Survey over a case

Look in the surroundings of the patient for cases and secondary sources.

This investigation is essential especially when the patient lives in a community, in a country with a high incidence of the disease.

Notifiable disease.

In some countries, pulmonary tuberculosis is a notifiable disease.

Contact time

4 Days

Number of participants: 30 persons

Day1: sharing knowledge and experiences of TMPs

Day2: presentation on the disease (s): instructor (s)

History

Mode of transmission

Epidemiology

Symptoms

Diagnosis

Prognosis

Day 3: Management of disease

No curative aspects

Preventive aspects (involvement of TMPs in the implementation of community-based initiatives).

Day4: Evaluation and closing session.

Assessment

Sharing knowledge.

Translation of module into training tools

The training is done in three phases.

- A motivation phase that will evaluate the achievements of TMPs in the field of tuberculosis. This phase is led by trainers who will record the information given by the TMPs themselves.
- A development phase, where trainers undertake interactive teaching (active images, computer, video projector, etc.).
- An evaluation phase where TMPs will assume the role of trainers to share the knowledge acquired during the training session.

Conclusion

TMPs are commended for agreeing to respond to the invitation

Solicit their involvement in the management of tuberculosis

Show interest in traditional medicine in providing care to populations.



Allium sativum



Aloe vera



Lawsonia inermis

Posology

Lawsonia inermis: Infusion; 30 g dried leaves in 600 ml of water; 3-4 teacups daily.

Aloe vera: Dried juice; 50-200 mg orally for adults.

Decoction: two tablespoonfuls daily before meals.

Allium sativum: Generally, the fresh bulb and the bulb oil can be given at 2-5 mg daily (or one fresh bulb or clove 1-2 times daily) while the dose for the powder is at 400-1200 mg daily. These are the particularly high doses when garlic is used as an antimicrobial, anthelmintic, antihypertensive, carminative, anti-lipidemic, antispasmodic, anti-diabetic and anti-inflammatory agent.

Bibliography

Tuberculosis, Wikipedia

Training Guide on CSA management of TB, NTP, Côte d'Ivoire

Method FAPEG, PROMETRA

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