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FOREWORD

I am indeed very pleased to write the foreword to this maiden edition of the Standard Treatment Guidelines (STG) for the Nigerian health care system. I am aware that the process of its production began in 2005 involving contributions and recommendations of various experts and stakeholders in the health care sector.

The STG is an important tool for the attainment of comprehensive and effective health care delivery services thereby achieving the goals of the National Drug Policy, which inter alia are: the availability of safe, efficacious and affordable medicines to satisfy the healthcare needs of the majority of the population and ensure the rational use of drugs. The fulfillment of the above mentioned goals is part of the strategic thrust of the Health Sector Reform Programme aimed at the reduction of disease burden and the improvement of access to quality health services. It is expected that the STG will become a major reference document for all health workers both in the public and private sectors.

It is instructive to note that the development of the STG followed due process with wide consultations and meetings involving various stakeholders and interest groups. The document that has come out of this process is a reflection of the quality of the inputs that went into its development. In my opinion, this maiden edition of the STG has been produced and serialized in such a way as to assist health care providers especially doctors in the effective discharge of their duties as prescribers. It will also ensure discipline as only those medicines recommended will be prescribed for patients within a given health facility.

I commend all those who worked tirelessly towards the completion of this maiden edition STG. Special mention and gratitude must go to the World Health Organization (WHO) for sponsoring and providing sustained technical support to the committee. Without this support, this STG would not have seen the light of the day.

Finally, let me quickly add that this STG must be widely circulated and disseminated. Everything possible must be done to ensure that practitioners maximize the benefit of such a useful document. If it has worked in other parts of the world, it should also work in Nigeria. It must also be subjected to regular reviews in view of the dynamic nature of health care management.

Dr. Hassan Muhammed Lawal, CON
Supervising Minister of Health
PREFACE

This first edition of Standard Treatment Guidelines (STG) for the Nigerian health practitioner is coming relatively later than those of many other countries. It is indeed a welcome development.

The standard of medical practice and the wage bill of health services are usually remarkably improved by health personnel putting to use STG. This among other benefits can only lead to improved health of the community.

In Nigeria our health indices are among the worst in the world. Our country Nigeria does not lack the manpower or the necessary infrastructure to turn things around. What appears to be lacking is the organization of health services required to put both to optimal use. Efforts such as the actualization of our own national STG and the various health reforms currently in progress will definitely improve our situation.

It is therefore my pleasure and privilege to write the preface to this maiden edition of the STG. This is the outcome of a long journey that started several years ago. The previous chairmen of the National Formulary and Essential Drugs Review Committees made efforts to start the project but were unsuccessful due to lack of funds.

The current committee had the luck of being assisted by the country office of the World Health Organization (WHO) in not only this endeavor but in the preparation and printing of the last edition of the Nigerian Essential Medicines List. The desk officer, Dr Ogori Taylor showed great commitment to the project and the country owes a debt of gratitude to WHO.

In preparing this document every effort was made to ensure that the stakeholders own the project so that it is not seen as an imposition. Accordingly, the major contributions came from various practitioners and their associations as well as from many practitioners whose input were judged crucial to the success of the project. We also adopted the acceptable practices in the field that were in use by special health projects such as HIV/AIDS, Malaria, TB/Leprosy programmes etc. The academia was also involved. There were several fora where the contributions were discussed openly with the stakeholders and consensus arrived at.

It is my hope therefore that this document will be widely used by Nigerian health practitioners. I salute the contributors and those that helped in one way or the other. The committee of course accepts responsibility for any lapses but also hopes that these would be brought to our attention for correction in subsequent editions.

Professor Ibrahim Abdu-Aguye, MBBS; FMCP; SFIAM; FIICA; D. Sc (Hon)
Chairman, National Formulary and Essential Drugs Review Committee.

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Chapter 3: Cardiovascular System

Standard Treatment Guidelines for Nigeria 2008

- Warfarin: monitor INR 2 - 2.5
- Important in atrial fibrillation

Supportive measures
Pacemakers for arrhythmias
Ventricular assist devices

Notable adverse drug reactions
Digoxin: arrhythmias
Potassium-sparing drugs: hyperkalaemia
ACEIs: hypotension, hyperkalaemia
Do not combine potassium supplements with potassium-sparing drugs

Precautions
The dose and infusion rate for dopamine are critical
- Low dose infusion rates will cause excessive hypotension
- Higher infusion rates will elevate the blood pressure

The use of 6 blockers, atrial natriuretic peptide analogues and endothelin receptor antagonists should be reserved for specialist care

Prevention
Adequate treatment of hypertension and diabetes mellitus
- Good sanitation and personal hygiene (to prevent rheumatic fever)

HYPERLIPIDAEMIA
Introduction
A clinical syndrome in which there are high lipid levels: cholesterol, or its fractions, or triglyceridaemia
Can be primary (hereditary) or secondary - as a result of other diseases

Incidence in Nigeria is thought to be low but recent studies show increasing incidence in association with diabetes mellitus and hypertension
A major risk factor for ischemia heart disease

Clinical features
Patients present with complications of hypertension, ischaemic heart disease or the cause of secondary hyperlipidaemia
Signs include xanthomata, xanthelasmina, and corneal arcas

Diastolic hypertension
Peripheral vascular disease
Stroke, hypertension

Investigations
Urea, Electrolytes and Creatinine
Fasting blood glucose
Lipid profile
Urine proteins

HEART FAILURE
Introduction
A clinical state (syndrome) in which the heart is unable to generate enough cardiac output to meet up with the metabolic demands of the body
The commonest cause in Nigeria is hypertension
Other causes include dilated cardiomyopathy and rheumatic heart disease
Cardiac failure can be classified as:
- Left or right-sided
- Congestive
- Acute
- Chronic
- Chronic cardiac failure is the commonest syndrome encountered in our setting

Clinical features
Difficulty with breathing on exertion
Paroxysmal nocturnal dyspnoea
Orthopnoea
Cough productive of frothy sputum
Leg swelling
Abdominal swelling
The prominence of particular symptoms will depend on which side is affected

Signs include:
- Oedema
- Tachycardia (about 100 beats per minute)
- Raised jugular venous pressure
- Displaced apex
- S3 or S4 or both (With or without murmurs)

Echocardiography
Electrocardiography
Venography (pelvic or calf veins)

Lyse the clot
Prevent clot from being dislodged

Complications
Thrombo-embolic phenomena: stroke, pulmonary embolism
Pre-rena al azotemia

Treatment objectives
Relieve symptoms
Enhance quality of life
Prevent complications
Prolong life

Non-drug treatment
Bed rest
Low salt diet
Exercise (within limits of tolerance)

Drug treatment
Digoxin
- 125 - 250 micrograms daily (the elderly may require 0.25 - 125 micrograms daily)
Diuretics
- Furosemide 40 - 80 mg intravenously or orally
Or:
- Bendroflumethiazide 5 mg orally daily
Or:
- Spironolactone 25 - 100 mg once, every 8 - 12 hours daily

Potassium supplements
- Potassium chloride 600 mg orally once, every 8 - 12 hours daily
- Potassium Sparing: 12.5 - 25 mg every 12 hours

ACEIs: hypotension, hyperkalaemia
Do not combine potassium supplements with potassium-sparing drugs

Precautions
The dose and infusion rate for dopamine are critical
- Low dose infusion rates will cause excessive hypotension
- Higher infusion rates will elevate the blood pressure

The use of 6 blockers, atrial natriuretic peptide analogues and endothelin receptor antagonists should be reserved for specialist care

Prevention
Adequate treatment of hypertension and diabetes mellitus
Good sanitation and personal hygiene (to prevent rheumatic fever)

HYPERTENSION
Introduction
A persistent elevation of the blood pressure above normal values (taken three times on at least two different occasions with intervals of at least 24 hours)

Blood pressure ≥ 140/90 mmHg irrespective of age is regarded as hypertension
The commonest non-communicable disease in Nigeria
The commonest cause of cardiac failure and stroke
Hypertension may be:
- Diastolic and systolic
- Diastolic alone
- Isolated systolic

Clinical features
Largely is asymptomatic until complicated ("silent killer")
Non-specific symptoms: headache, dizziness, palpitations etc
Other symptoms and signs depending on the target organs affected e.g. cardiac or renal failure, stroke etc

Other symptoms include:
- Headache
- Angina
- Nocturnal dyspnoea
Differential diagnoses
White coat hypertension
Anxiety/fright/stress

Complications
Heart:
- Heart failure, ischaemic heart disease
Brain:
- Stroke (ischaemic, hemorrhagic)
Eye:
- Hypertensive retinopathy
Kidney:
- Renal failure
- Large arteries:
  - Aortic aneurysm

Investigations
Full Blood Count
Urinalysis; urine microscopy
Urea, Electrolytes and Creatinine
Uric acid
Fasting blood glucose
Lipid profile
Chest radiograph
Electrocardiography
Echocardiography (not in all cases)
Abdominal ultrasound
Renal angiography (not in all cases)

Supportive measures
Patient/care giver education

Notable adverse drug reactions
Penicillin: rashes, anaphylaxis
Gentamicin: nephropathy

Prevention
Prophylactic antibiotics for patients at risk who are undergoing:
1. Dental procedures
   Under local or no anaesthesia, for those who have NOT had endocarditis, and have NOT received more than a single dose of a penicillin in the last one month:
   Amoxicillin
   Adult: 3 g orally 1 hour before procedure
   Child under 5 years: 750 mg orally 1 hour before procedure; 5 - 10 years: 1.5 g
   For penicillin-allergic patients or patients who have received more than a single dose of a penicillin in the previous one month:
   Azithromycin
   Adult: 500 mg orally one hour before procedure
   Child under 5 years: 200 mg orally; 5 - 10 years: 300 mg
   Patients who have had endocarditis:
   - Amoxicillin plus gentamicin intravenously as for procedures under general anaesthesia (see below)
   Dental procedures under general anaesthesia, and no special risk:
   Amoxicillin
   Adult: 1 g intravenously at induction of anaesthesia; 500 mg orally 6 hours later
   Child under 5 years: a quarter of adult dose; 5 - 10 years: half adult dose
   Or:
   Adult: 3 g orally 4 hours before induction, then 3 g orally as soon as possible after the procedure
   Child under 5 years: a quarter of adult dose; 5 - 10 years: half adult dose
   Special risk, e.g. previous infective endocarditis, or patients with prosthetic valves:
   Amoxicillin plus gentamicin intravenously
   Adult: 1 g amoxicillin plus 120 mg gentamicin at induction
   - Then oral amoxicillin 500 mg 6 hours after procedure
   Child under 5 years: a quarter of adult dose of amoxicillin plus 2 mg/kg gentamicin intravenously at induction
   5 - 10 years: half adult dose for amoxicillin; 2 mg/kg gentamicin
   Patients who are penicillin-allergic or have received more than a single dose of a penicillin in the last one month:
   Vancomycin