standard treatment guidelines

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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.

TABLE OF CONTENTS

SECTION A

Chapter 1: Alimentary Tract
Gastrointestinal Disorders 1
Amoebiasis 1
Bacillary Dysentry 1
Cholera 2
Constipation 2
Diarrhoea (acute) 3
Gastritis 4
Giardiasis 4
Haemorrhoids 5
Pancreatitis 5
Peptic Ulcer Disease 6
Upper Gastrointestinal Bleedin 6
Hepatic And Biliary Disorders 7
Hepatitis.. 7
Hepatic Encephalopathy 8
Jaundice 9
Liver Cirrhosis 9
Nutritional Disorders 10
Kwashiokor And Marasmus 10
Micronutrient Deficiencies 10
Obesity....11

Chapter 2: Blood And Blood-forming Organs
Anaemias 13
Blood Transfusion 14
Haemostasis And Bleeding Disorders 16
Leukaemias 16
Lymphomas 19
Sickle Cell Disease....20

Chapter 3: Cardiovascular System
Angina Pectoris....23
Cardiac Arrhythmias 23
Congenital Heart Disease 24
Deep Venous Thrombosis 24
Heart Failure 25
Hyperlipidaemia 26
Hypertension 26
Infective Endocarditis 27
Myocardial Infarction....29
Myocarditis 30
Paediatric Cardiac Disorders....30
Pericarditis 30
Pulmonary Embolism 31
Pulmonary Oedema 32
Rheumatic Fever 32
Rheumatic Heart Disease 33

Chapter 4: Central Nervous System
Non-psychiatric Disorders 34
Dizziness 34
Headaches....35
Meningitis 36
Migraine 37
Parkinsonism....38
Seizures/epilepsies 39
Stroke 41
Syncope 42
The Unconscious Patient 42
Psychiatric Disorders 43
Alcoholism (alcohol Dependence) 43
Anxiety Disorder 44
Bipolar Disorders 44
Delirium....45
Depression 46
Insomnia....47
Panic Disorder....47
Schizophrenia....48

Chapter 5: Dental And Oral Disorders
Acute Necrotizing Ulcerative Gingivitis....49
Acute Periapical Abscess 49
Alveolar Osteitis 50
Cellulitis....50
Dental Caries 50
Gingivitis 51
Neoplasms Of The Oral Cavity 51
Oral Thrush (candidiasis) 51
Pericoronitis 52
Periodontitis....52
Pulpitis 53
Salivary Gland Diseases 54
Temporo-mandibular Joint Disorders....54

Chapter 6: Dermatology
Bacterial Infections 56
Cellulitis 56
Furunculosis (boils) 56
Impetigo Contagiosa 57
Dermatitis And Eczema 58
Atopic Dermatitis (atopic Eczema)....58
Contact Dermatitis 59
Exfoliative Dermatitis (erythroderma)....59
Parasitic Dermatoses 60
Cutaneous Larva Migrans (creeping Eruption)....61

Guinea Worm Disease (dracunculiasis).....61
Myiasis 62
Onchocerciasis (river Blindness) 62
Pediculosis (lice) 63
Scabies 64
Papulosquamous Disorders 65
Lichen Planus 65
Pityriasis Rosea 66
Psoriasis 67
Superficial Fungal Infections 69
Dermatophyte Infections (tinea) 69
Pityriasis Versicolor (tinea Versicolor) 70
Viral Infections 71
Herpes Zoster 71
Molluscum Contagiosum 72
Varicella (chickenpox) 72
Viral Warts (verrucae) 73
Miscellaneous Disorders 74
Acne Vulgaris (pimples) 74
Pruritus 76
Urticaria And Angioedema 78
Vitiligo 80

Chapter .7: Ear, Nose And Throat
Acute Otitis Media.....81
Adenoid Disease 82
Chronic Otitis Media 82
Epistaxis 83
Foreign Bodies In The Airways 83
Foreign Bodies In The Ear 84
Foreign Bodies In The Nose And Rhinoliths.....84
Mastoiditis.....84
Nasal Allergy 85
Otitis Externa 86
Peritonsillar Abscess (quinsy) 86
Pharyngitis (sore Throat) 86
Sinusitis 87
Tonsillitis 88
Tracheostomy 89
Wax In The Ear 89

Chapter 8: Endocrine System
Diabetes Mellitus 90
Hyperthyroidism (thyrotoxicosis) 97
Hypothyroidism (myxoedema) 99

Chapter 9: Eye Disorders
Acute Anterior Uveitis (iritis) 100
Acute Keratitis 100
Allergic Conjunctivitis 101
Eye Injuries 101
Foreign Bodies In The Eye 102
Infective Conjunctivitis 103
Ophthalmia Neonatorum 103
Scleritis / Episcelitis 104
Stye (hordeolum) 104
The Red Eye 104
Trachoma.....105
Xerophthalmia 105

Chapter 10: Genito-urinary System
Nephrology 106
Acute Renal Failure.....106
Chronic Kidney Disease 106
Nephrotic Syndrome 107
Sexually Transmitted Infections 108
Bacterial Vaginosis 108
Chancroid (ulcus Molle, Soft Chancre) 109
Chlamydial Infection 110
Gonorrhoea 111
Granuloma Inguinale (donovanosis;
Granuloma Venereum).....113
Lymphogranuloma Venereum 114
Syphilis 115
Trichomoniasis 116
Vulvo-vaginal Candidiasis 117
Urology 118
Benign Prostatic Hyperplasia 118
Carcinoma Of The Prostate 118
Erectile Dysfunction (impotence) 119
Male Infertility 120
Posterior Urethral Valves 120
Priapism 121
Prostatitis 121
Scrotal Masses 122
Torsion Of The Testis 122
Urethral Stricture 123
Urinary Schistosomiasis 123
Urinary Tract Calculi 124

Chapter 11: Infectious Diseases / infestations
Fevers: Management Approach 125
Food Poisoning 125
Helminthiasis 127
Human Immunodeficiency Virus Infection 129
Malaria 135
Rabies.....137
Tetanus 138
Trypanosomiasis (sleeping Sickness) 140
Tuberculosis 140
Typhoid Fever 142

Chapter 12: Musculoskeletal System
Back Pain 143
Gout 144
Osteoarthritis 145
Rheumatoid Arthritis 146
Septic Arthritis 147
Systemic Lupus Erythematosus 148

Chapter 13: Obstetrics And Gynaecology
Abortion 149
Antenatal Care 150
Anaemia In Pregnancy 152
Cancer Of The Cervix 153
Cardiac Disease In Pregnancy 154
Eclampsia 156
Ectopic Pregnancy 158
Hyperemesis Gravidarum 159
Immunization Schedules 160
Jaundice In Pregnancy 160
Pelvic Inflammatory Disease 162
Rape 163

Chapter 14: Respiratory System
Acute Epiglottitis 165
Acute Laryngo-tracheo-bronchitis (croup) 165
Acute Rhinitis (common Cold) 166
Bronchial Asthma 166
Bronchiectasis 167
Chest Pain 168
Chronic Obstructive Airways Disease(coad) 168
Cough 169
Dyspnoea 170
Lung Abscess 170
Pneumonia 171
Pulmonary Embolism 172

Section B

Chapter 15: Injuries And Acute Trauma
Bites And Stings 173
Burns 175
Disaster Plan 176
Head Injury 177
Multiple Injuries 180

Chapter 16: Surgical Care And Associated Disorders
Acute Abdomen 182
Antimicrobial Prophylaxis In Surgery 184
Intestinal Obstruction 184
Preoperative Evaluation and
Postoperative Care 186
Use Of Blood Transfusion In Surgery 189

Chapter 17: Paediatric Perspectives
Measles (rubeola) 190
Poliomyelitis 191
Vitamin A Deficiency 193

Section C

Chapter 18: Emergencies
Acute Left Ventricular Failure 195
Cardiac Arrest 196
Drowning And Near-drowning 197
Electrolyte Abnormalities 198
Hypertensive Emergencies 200
Hypoglycemia 200
Myxoedema Coma 201
Thyroid Storm (thyrotoxic Crisis) 201
Poisoning 202

Chapter 19: Therapeutics
Prescription Writing 206
Adverse Drug Reactions 208

Chapter 20: Notifiable Diseases 209

APPENDICES

Appendix I
WHO clinical staging of HIV for infants and children with established HIV infection.....211

Appendix II:
WHO new antenatal care model classifying form 2001.....212

Appendix III
Calculation of dosage requirements in children.....214

Appendix IV:
Medicines with teratogenic potential.....215

Appendix V:
Medicines that could cause harm when administered to breastfeeding mothers.....215

Appendix VI:
NAFDAC Adverse Drug Reaction Reporting form 217

Echocardiography
Electrocardiography
Venography (pelvic or calf veins)

Treatment objectives

Lyse the clot
Prevent clot from being dislodged
Relieve inflammation

Non-drug treatment

Avoid stasis

Drug treatment

Achieve APTT of 1.5 to 2.5 of control:

Heparin 5000 - 10,000 units by intravenous injection followed by subcutaneous injection of 15,000 units every 12 hours or intravenous infusion at 15 - 25 units/kg/hour, with close laboratory monitoring

Warfarin 1 - 5 mg orally daily for 6 - 12 weeks

Notable adverse drug reactions

Bleeding from heparin, warfarin
Osteoporosis (heparin)

Prevention

Low molecular weight heparin 5000 units subcutaneously every 12 hours
Early mobilization

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)
Chest: with or without crepitations
Abdomen: hepatomegaly

Differential diagnoses

Bronchial asthma
Chronic obstructive airways disease (COAD)
Renal failure
Liver failure

Complications

Thrombo-embolic phenomena: stroke, pulmonary embolism
Pre-renal azotaemia
Arrhythmias

Investigations

Full Blood Count with differentials
Urea, Electrolytes and Creatinine
Fasting blood glucose
Urine micro-analysis
Chest radiograph
Electrocardiography
Echocardiography

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 62.5 - 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 depending on the serum levels of potassium

Vasodilators

- Angiotensin converting enzyme inhibitors (ACEIs)

Captopril 6.25 - 25 mg every 12 hours

Or:

Lisinopril 2.5 - 20 mg daily

Venodilators

- Nitrates

Glyceryl trinitrate 0.3 - 1 mg sublingually and repeated as required

Ionotropes

- Dopamine 2 - 5 microgram/kg/minute by intravenous infusion

Anticoagulants

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

Supportive measures

Pacemakers for arrythmias
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 β 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 hyperlipideaemia

Signs include xanthomata, xanthelasmata, and corneal arcus

Differential diagnoses

Primary hyperlipidaemia
Secondary hyperlipidaemia: diabetes mellitus, nephrotic syndrome

Complications

Ischaemic heart disease
Peripheral vascular disease
Stroke, hypertension

Investigations

Urea, Electrolytes and Creatinine
Fasting blood glucose
Lipid profile
Urine proteins
Serum proteins (total and differential)

Treatment objectives

Lower lipid levels
Prevent complications
Treat complications

Non-drug treatment

Stop smoking
Reduce weight
Exercise moderately and regularly
Water soluble fibre: oat, bran

Drug treatment

Fluvastatin

- Initially 20 mg orally once daily at bedtime
- Adjust dose at 4-week intervals as needed and tolerated
- Maintenance 20 - 40 mg orally once daily in the evening
- A 40 mg daily dose may be split and taken every 12 hours

Notable adverse drug reactions, caution and contraindications

Caution in patients with history of liver disease, high alcohol intake

Hypothyroidism should be adequately managed before starting treatment with a statin

Liver function tests mandatory before and within 1 - 3 months of starting treatment; thereafter at intervals of 6 months for 1 year

Statins may cause reversible myositis, headache, diarrhoea, nausea, vomiting, constipation, flatulence, abdominal pain; insomnia

Prevention

Dietary manipulation
Early identification of individuals at risk

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

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)
Treatment objectives
Educate patient about disease and need for treatment adherence
Reduce blood pressure to acceptable levels
Prevent complications (primary, secondary, tertiary)
Rehabilitate
Non-drug treatment (lifestyle modification)
Low salt diet
Achieve/maintain ideal body weight (BMI 18.5 - 24.9 kg/m^2)
Stop smoking
Reduce alcohol intake
Regular moderate exercise
Reduce polysaturated fatty acid intake
Drug treatment
Diuretics:
Thiazides
- Bendroflumethiazide 2.5 - 10 mg orally daily
Or:
- Hydrochlorothiazide 12.5 - 50 mg orally daily
Or:
- Hydrochlorothiazide/amiloride 25/2.5 mg daily
Loop diuretics
- Furosemide 40 - 80 mg orally daily
ß-blockers:
Propranolol 40 - 80 mg orally every 8 - 12 hours
Or:
Atenolol 25 - 100 mg orally daily
Calcium channel antagonists:
Nifedipine retard 20 - 40 mg orally once or twice daily
Or:
Amlodipine 2.5 - 10 mg orally once daily
Angiotensin converting enzyme inhibitors:
Captopril 6.25 - 50 mg orally once or every 8 - 12 hours
Or:
Lisinopril 2.5 - 20 mg orally once daily
Angiotensin receptor blockers:
Losartan 50 - 100 mg orally daily
Other vasodilators:
Hydralazine 25 - 100 mg orally once daily or every 12 hours
Or:
Prazosin 0.5 - 1 mg orally daily
Centrally acting drugs:
Alpha methyldopa 250 - 500 mg orally twice, three or four times daily
Fixed combinations:
Reserpine plus dihydroergocristine plus clopamide 0.25/0.5/5 mg one-two tablets orally daily
Or:
Lisinopril plus hydrochlorothiazide 20/12.5 mg daily
Hypertensive emergencies
Treatment should be done by the experts
Involves the administration of antihypertensives by the parenteral route (usually intravenous hydralazine or sodium nitoprusside)
Supportive measures
Patient/care giver education
Notable adverse drug reactions, caution and contraindications
All antihypertensive drugs may themselves cause hypotension
Angiotensin converting enzyme inhibitors, angiotensin receptor blockers: angioedema; cough with ACEIs
Alpha methyldopa, thiazides (and potentially other anti-hypertensive drugs): erectile dysfunction
SLE-like syndrome: hydralazine
Do not use β blockers in asthmatics
Prevention
Weight reduction
Exercise moderately and regularly
Public education
Individual approach
Population approach
Advocacy for the positive lifestyle change

INFECTIVE ENDOCARDITIS

Introduction
A microbial infection of the endocardium and the valves of the heart
May be acute or sub-acute
Some acute cases occur in normal valves or may be part of systemic illness

The sub-acute form usually occurs on damaged valves (e.g. rheumatic heart disease, congenital heart disease), shunts, and atherosclerotic lesions
Causative organisms include staphylococci, streptococci enterococci; haemophilus, actinobacillus, cardiobacterium, eikenella, and kingella species ('HACEK' organisms)
Clinical features
Acute:
High fever with rigors
Delirium
Shock
Development of new murmurs
Severe cardiac failure
Abscesses may form in many parts of the body (e.g. brain)
Subacute:
Low-grade fever
Signs of carditis
Finger clubbing
Arthralgia
Splenonegaly
Osler's nodules
Janeway lesions
Roth spots
Differential diagnoses
Myocarditis
Rheumatic heart disease
Complications
Cardiac failure
Destruction of heart valves
Systemic embolism (could be infective)
Investigations
Full Blood Count and differentials; ESR
Urinalysis; urine microscopy
Blood cultures X 3 (the yield is higher at the time of pyrexia)
Echocardiography
Treatment objectives
Stop the infection
Treat cardiac failure
Prevent coagulation disorders
Non-drug treatment
Bed rest
Low salt diet
Drug treatment
Initiate therapy with:
Benzylpenicillin 7.2 g daily by slow intravenous injection or intravenous infusion in 6 divided doses for 4 - 6 weeks
- May be increased up to 14.4 g daily if necessary (e.g. in endocarditis)
Plus:
Gentamicin 60 - 80 mg intravenously or intramuscularly every 8 hours for 2 weeks

Following bacteriological confirmation institute appropriate antimicrobial therapy
Staphylococci:
Flucloxacillin
- 250 mg - 2 g intravenously every 6 hours for 4 - 6 weeks
Candida:
Systemic antifungals
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