

NATIONAL POSTGRADUATE MEDICAL COLLEGE OF  
NIGERIA



CURRICULUM FOR SUBSPECIALTY IN PAEDIATRIC  
RHEUMATOLOGY

FACULTY OF PAEDIATRICS

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# **PAEDIATRIC RHEUMATOLOGY**

## **FACULTY OF PAEDIATRICS**

### **SPECIALIST TRAINING PROGRAMME IN PAEDIATRIC RHEUMATOLOGY**

#### **PRE-AMBLE**

Paediatric Rheumatology is the subspecialty of Paediatrics that deals with non-traumatic diseases of the musculo-skeletal system, connective tissues and auto immune diseases of other organs. In most parts of the world, it is a developing specialty of Paediatric. The management of various forms of rheumatic and musculo-skeletal disease (RMD) have been transformed in the last 30 years. The delivery of the best available treatment can only be achieved by a paediatrician-rheumatologist with appropriate knowledge and skills.

Paediatric rheumatology is an evolving subspecialty all over the world. As a result, there are very few training centres.

Hitherto, many cases of arthritis and rheumatism are managed by orthopedic surgeon and general practitioners who may not necessarily have the skill or knowledge to diagnose, investigate and manage the more than 100 types of RMDs known.

As the developing countries in West Africa grapple with and overcome infections diseases, infestations. It is obvious that chronic conditions such as arthritis will become a priority. Properly trained paediatric rheumatologists could mitigate the economic and social impact of RMDs in the community.

#### **AIMS OF THE RHEUMATOLOGY CURRICULUM**

1. Development of an understanding of the science and clinical aspect of paediatric rheumatology
2. Promotion of high standards of clinical practices and management
3. Development of interest in research and epidemiology of RMDs in children

#### **OBJECTIVES**

1. Understanding the embryology of musculoskeletal system in humans
2. Understanding of the basic physiology and anatomy of the musculo-skeletal system in children
3. Understanding the structure, and distribution of connective tissues.
4. Understanding in details, the structure and functions of various types of joints with special reference to the synovial joints
5. Understanding the basis of classification of RMDs and the common characteristics of each class.
6. Understanding the epidemiology of RMDs, worldwide and factors determining such

7. Understanding the pathogenesis aetiology, clinical features, investigations and management of specific rheumatological conditions as they pertain to children.
8. Understanding of the basis, indication methodology of serological investigations in rheumatology practice.
9. Adequate exposure and interpretation of relevant investigations such as blood tests, radiography, CT, MRI, Bone Scan, Densitometry, Arthroscopy, Ultrasound, EMG, Musculoskeletal Ultrasound
10. Initiation of research
11. Appreciation of inter-dependence of rheumatology on other paediatric and paramedical disciplines.
12. Understanding the roles of medical social workers in the management of paediatric rheumatological disease

### **ELIGIBILITY**

- Candidates eligible to specialize in rheumatology must have any of the following qualification Part I National Postgraduate Medical College of Nigeria in paediatric
- Any other equivalent as prescribed by the National Postgraduate Medical College of Nigeria

### **TRAINING STRUCTURE AND CONTENT**

The training will take at least 3 years consisting of

1. Basic rheumatology training in an accredited adult rheumatology unit in West Africa – 12 months
2. 6 - 12 months Paediatric rheumatology training in an approved centre outside Nigeria

Training will be in an approved and accredited Teaching Hospital. The trainee will spend at least three months in a rheumatology centre in either South Africa, U.K. or any other institution as approved until such a period when there will be accredited Paediatric rheumatology training in West Africa

### **TRAINING STRUCTURE**

1. Core rheumatology posting – minimum of 18 months
  2. Immunology/Serology – 1 month
  3. Radiology-posting – 1 months
  4. Orthopaedic surgery – 2 months
  5. Physiotherapy and Rehabilitation – 1 month
  6. Related specialties in paediatric e.g. Neurology, Dermatology, Nephrology – 6 months
  7. Dissertation and Running Paediatric Rheumatology unit – 6 months
- Some of the postings may overlap one another

### **COURSES TO ATTEND**

1. Research methodology course of NPMCN
2. Management course of NPMCN
3. Rheumatology update courses of NPMCN

### **ON-LINE COURSE**

## **EVALUATION**

1. Log Book - 10%
  2. Specialty Paper – MCQ – 20%
  3. Case Books – [10 case reports] – 20%
  4. Dissertation - 30%
  5. Paediatric Rheumatology VIVA – 20%
- TOTAL - 100%

## **SELF-LEARNING TOPICS**

### **A. BASIC MEDICAL SCIENCES**

- Immune system – innate and acquired; Associated diseases
- T and B cell biology and functions
- Immune responses
- Angiogenesis and Adhesion mechanisms
- Inflammatory mediators and mechanisms
- Antigen processing and macrophage functions
- Autoimmunity
- Role of infection in pathogenesis of arthritis
- Bacteriology for rheumatologist
- Virology for rheumatologists
- Immunity to microbes
- Immunodeficiencies
- Apoptosis
- Anatomy and physiology of joints
- Pain – Mechanism, Types, Presentation

### **B. EPIDEMIOLOGY AND GENETICS**

- Statistics – in clinical measurement and epidemiology
- Statistics in clinical and drug trials
- Epidemiology of RMDs
- Introduction and Basic concepts in Genetics
- Gene functions and interactions
- The human genome project
- HLA and rheumatic diseases
- Animal models of arthritis
- Drug development and evolution of drug trials
- Instruments for assessing drug efficacies and adverse effects

### **C. ORGANISING RESEARCH**

- Initiation of research topics
- Ethical issues
- Clinical research methodology
- Epidemiological research methodology
- Information technology and application in research

- Writing up and presenting research works
- Choice of journal

## **1. CLINICAL TOPICS**

- Basic definitions and descriptions in rheumatology
- Classification and characteristics of paediatric rheumatic diseases
- Differentiation between Arthritis and non articular rheumatism.

## **TUTORIALS**

- Immune Reaction, Auto immunity
- Pharmacology of NSAIDs, Indications and Adverse Effects
- GENERAL ASPECTS OF CHILDHOOD AND ADOLESCENCE
- JUVENILE IDIOPATHIC ARTHRITIS – CLASSIFICATION, PATHOGENESIS, MANAGEMENT

## **RHEUMATOID ARTHRITIS**

- Prevalence
- Clinical features, investigations and serology
- Early RA. Diagnosis. Prognosis
- Tools of assessment

Tutorials - DMARDs

Immune Biologics

Oral Targeted therapy

Indications for surgery

## **JUVENILE SPONDYLOARTHROPATHIES**

- Ankylosing Spondylitis
- Psoriatic arthritis
- Reiter's Disease
- Spondyloarthropathy of inflammatory Bowel Disease
- Undifferentiated Spondyloarthropathy
- SAPHO
- Assessing outcomes in spondyloarthropathies

Tutorial

- HLA typing and frequency
- Immune Biologics
- Oral Targeted therapy

## **CRYSTAL ARTHRITIS**

- Gout – childhood diseases causing Gout
- Pseudogout
- Other crystal synovitis

## **CONNECTIVE TISSUE DISEASES (CTD)**

- Characteristics of CTD
- Complement system and immune complexes
- Other immune complex diseases
- Relation between immune complexes and the inflammatory process

### **JUVENILE SYSTEMIC LUPUS ERYTHEMATOSUS**

- Pathogenesis and clinical features
- Outcome of lupus and assessment
- Management of lupus
- Special issues in lupus – lupus nephritis, neuropsychiatric lupus, cytopenias
- Lupus and pregnancy
- Anti-phospholipid syndrome

Tutorials : Serology markers and significance

### b) **JUVENILE SCERODERMA**

- Aetiopathogenesis, clinical features and management
- Prostacylin, Endothelin Receptor Antagonist
- Raynauds phenomenon

### **JUVENILE POLYMYOSITIS/DERMATOMYOSITIS**

- Aetiopathogenesis, clinical features, management
- Differential diagnosis
- Serology
- Dermatomyosities and Malignancies
- Anti synthetase syndrome

Tutorial

- Muscle histology
- EMG
- Nerve Conduction Tests
- CONGENITAL IMMUNE DEFICIENCY – cyclic Neutropenia

### **INFECTIOUS AND POST-INFECTIOUS ARTHRITIS VASCULITIS AUTO-INFLAMMATORY DISEASES**

- Periodic fever
- Panniculitis/lipodystrophy
- Vasculopathy and ulcers
- Polyarteritis nodosa
- Sterile inflammation of joints /bone/skin
- PAPA, Blau Syndrome
- Familial Mediterranean fever

## **OTHERS**

- SICKLE CELL DISEASE
- TUBERCULOUS ARTHRITIS
- INFECTIVE ARTHRITIS
- REACTIVE ARTHRITIS
- AVASCULAR NECROSIS
- RHEUMATIC MANIFESTATIONS OF SYSTEMIC DISEASES – DIABETES MELLITUS, SICKLE CELL DISEASE, H.I.V.
- OSTEOPOROSIS
- OSTEOMALACIA
- OSTEOMYELITIS
- BONE AND JOINT MALIGNANCIES
- SKIN AND RHEUMATIC DISEASES
- EYE AND RHEUMATIC DISEASES
- NEUROPATHIC PAIN

## **PROCEDURES**

1. ARTHROCENTESIS/INTRA-LESIONAL STEROID INJECTIONS
  - Knees - 30
  - Shoulders - 20
  - Ankles - 10
  - Plantar - 10
2. ARTHROSCOPY - to observe – 10
3. RADIOLOGY REPORTS –
  - Knees - 50
  - Spine - 20
  - Shoulders - 20
  - Elbows - 10
  - Hand/feet - 20
  - Hips - 20
4. SKIN PUNCH BIOPSY - 10
5. CT SCANS - Observation and interpretation - 20
6. MRI - Observation and interpretation - 20
7. Serology tests to be interpreted
  - Rheumatoid factors, ANA, ENA, Anti-DNA, ACA, ANCA, Anti CCP, Ro/SSA, La/SSB
8. ABDOMINAL ULTRASOUND – Observation and interpretation – 20
9. ECHOCARDIOGRAPHY - Observation and interpretation – 10
10. MUSCULOSKELETAL ULTRASOUND

## **TUTORIALS**

1. Role of cytokines in pathogenesis of RA
2. Pathogenesis of joint, skin, eye and bowel inflammation in seronegative arthropathies
3. Infection and rheumatic diseases
4. Pathogenesis of Antiphospholipid syndrome
5. Structure and function of Synovial membrane

6. Structure and function of articular cartilage
7. Bone scans in rheumatic diseases
8. Pathogenesis and treatment of scleroderma
9. Racial and regional distribution of osteoporosis
10. Mechanism and drug therapy of osteoporosis
11. Psychological aspects of pain and management
12. Sports injuries
13. Back pain

### **TEXTBOOKS**

1. Practical Rheumatology
2. Soft Tissue Rheumatology. Eds. Hazleman B, Riley G, Speed C. Oxford University Press
3. Rheumatology – Eds Klipped JH and Dieppe PA – Mosby
4. EULAR Textbook on Paediatric Rheumatology publisher

### **JOURNALS**

1. Arthritis and Rheumatology
2. Annals of the Rheumatic Diseases
3. British Medical Journal
4. Clinical Rheumatology
5. Nigerian Medical Journal
6. African Journal of Medicine and Medical Sciences
7. West African Journal of Medicine
8. African Journal of Rheumatology

### **RECOMMENDED CONFERENCES**

1. American College of Rheumatology
2. British Society of Rheumatology
3. EULAR
4. AFLAR
5. National Postgraduate Medical College of Nigeria Conference
6. South African Rheumatism and Arthritis meetings.