MEDICAL TRAINING
CURRICULUM
FOR
DNB RHEUMATOLOGY

National Board of Examinations
New Delhi

INTRODUCTION

The National Board of Examinations was established in 1975 by the Government of India with the prime objective of improving the quality of the Medical Education by establishing high and uniform standards of postgraduate examinations in modern medicine on an all India basis.

DNB in Rheumatology

Approval of Course
The DNB program shall be started only after appropriate regulatory approvals from NBE.

Entry Requirements
Applicants for DNB Rheumatology course should have passed DNB or MD in General Medicine.

Admission Procedure
Students will be granted admission as per the procedure laid down by the NBE for Admission to various DNB Superspecialty courses in various Institutions/Hospitals accredited for running DNB Rheumatology Courses. Currently this is being done through a CET-Superspecialty Examination held as per schedule of examinations laid down by NBE from time to time followed by merit base centralized counseling conducted by NBE.

Duration of the Course
The duration of course in Rheumatology will be 3 years, which will include training in Clinical, basic sciences and Research.

Research
A period of supervised research of good quality is considered a highly desirable part of DNB course in Rheumatology and the candidate will be required to write a Thesis and the Provisional Pass Certificate will only be issued after acceptance of his/ her Thesis.

Training Record
A Log book of training will be maintained by the trainee, to be countersigned by the relevant trainer and trainee annually; it will remain the property of the trainee. It will contain details of training requirements and competences to be achieved within the context of the broad curriculum outlined below. In general it will be a portfolio of material documenting the trainees progress and clinical performance and might include: summaries of exemplary clinical case material, profile of clinical case mix seen and procedures performed each month, training/educational courses attended, published or unpublished audit, critical review of literature presentations of audit, clinical cases & research work at local or national meetings and peer reviewed publications.

Assessment

Assessment of trainees will be done by a formal examination held by the NBE at the end of 3 years as per criteria laid down by NBE.

DNB Rheumatology Course - General Description

A broad experience in general (internal) medicine is considered essential for the practice of rheumatology, hence students enrolling for this course should have a strong background of Internal Medicine. During the course the individual should have the experience of continuing care for Rheumatology patients on an inpatient and outpatient basis. During this time the trainee should acquire the knowledge, experience and skills detailed in the syllabus and record them in the training record.

DESCRIPTION OF THE DISCIPLINE

Rheumatology incorporates the investigation, diagnosis, management and rehabilitation of patients with disorders of the musculoskeletal system ie the locomotor apparatus, bone and soft connective tissues. The rheumatic disorders thus include diverse conditions such as inflammatory arthritis, autoimmune rheumatic disorders, soft tissue conditions including injuries, osteoarthritis, spinal pain and other chronic pain syndromes and metabolic bone disease. Rheumatology requires interdisciplinary knowledge and awareness of new developments in internal medicine, immunology, orthopaedics, neurology/pain management, rehabilitation, psychiatry, nursing and professions allied to medicine.

AIMS OF THE POST-GRADUATE TRAINING.

Post graduate training leading to recognition as a specialist should furnish the doctor with knowledge and skills which will enable them to become competent in the field of rheumatology. The curriculum will enable trainees the opportunity to be competent in the:

- Establishment of a differential diagnosis for patients presenting with clinical features of musculoskeletal conditions by appropriate use of history, clinical examination and investigation.
- Performance of the core investigations required for all physicians practising rheumatology
- Development of management plans for the “whole patient” and have sound knowledge of the appropriate treatments including health promotion, disease prevention and long term management plans.
- Communication of the diagnosis and management options with the patient and other members of the multidisciplinary team.
- Application of sufficient knowledge and skill in diagnosis and management to ensure safe independent practice.
- Provision of effective team working and leadership skills
- Application of knowledge of the appropriate basic sciences relevant to rheumatology
- Management of time and other resources to the benefit of their patients and colleagues
- Facilitation of effective learning by other clinical and allied staff.
- Maintenance of professional standards through continuing development and learning
- Critical appraisal and analysis of clinical research methodology and results.

TEACHING & LEARNING METHODS

Teaching method and learning methods will include

a) Knowledge acquisition by Personal study including effective use of medical literature, Tutorials, Post graduate teaching.

b) Clinical skills and attitudes by demonstration of examination skills in normal subjects & patients by trainer

Presenting history, demonstrating clinical findings & use of investigations on ward rounds or tutorial sessions

Presenting cases for group discussion – grand rounds, PG meetings etc, Regular radiology meetings, Personal study including the effective use of medical literature, Review of paper or electronically based problem cases Observation of consultant trainers managing clinical problems in day to day practice Observation of consultant trainer communicating with patients and members of team in day to day practice

Reinforce skills by practice during on the job training with both in-patients and out-patients – the latter would include general unselected rheumatology cases, special rheumatology clinics (eg connective tissue or early arthritis)

c) Procedures – Demonstration of injection technique by trained operator in patients requiring the procedure, use of models to practice technique, perform procedure under observation, reinforce skills during on the job training with both in-patients and out-patients.

2. SYLLABUS

KNOWLEDGE BASE

The student should acquire a sound knowledge of the natural history and pathophysiology of rheumatic disease and the basic scientific principles and evidence base of the current practice of rheumatology. This knowledge base will be applied to ensure safe and competent clinical practice.

The trainee will be required to demonstrate working knowledge of Basic science as applied to the rheumatic diseases, esp. anatomy, biochemistry, physiology, immunology, genetics, pharmacology, etc. and epidemiology, aetiology pathogenesis pathology, clinical features, natural history, impact on physical and psychological growth, and development in children and adolescents, management, and its' evidence base of various rheumatological diseases listed below.

1) Regional pain syndromes:

Spinal pain
Intervertebral disc disorders
Spinal canal or foraminal stenosis & related syndromes
Limb pain syndromes (eg rotator cuff disease, epicondylitis & other soft tissue conditions, nonspecific
Limb pain, plantar fasciitis, bursitis, algodystrophy etc)
Chest wall pain syndromes
Fibromyalgia and related somatoform disorders
Benign joint hypermobility
Specific to childhood – eg nocturnal limb pain, Osgood-Schlatter's, Perthe's etc

2) Osteoarthritis and related conditions:

Osteoarthritis
Dish
Neuropathic arthritis
Crystal associated arthropathy – urate, cppd, basic calcium phosphate, oxalate

3) Juvenile Idiopathic Arthritis

4) Spondylarthropathy

Ankylosing spondylitis
Enteropathic arthropathies
Psoriatic arthritis
Reactive arthritis

Whipple's disease

5) Autoimmune rheumatic disease

Rheumatoid arthritis
Systemic lupus erythematosus and related overlap syndromes
Systemic sclerosis, sjogrens syndrome
Inflammatory muscle disease
Vasculitides, antiphospholipid syndrome, Behcet's disease

6) Metabolic, endocrine and other disorders

Osteoporosis
Rickets and osteomalacia
Bone & joint dysplasias
Renal bone disease
Endocrine disorders affecting bone, joint or muscle (eg thyroid, pituitary, parathyroid)
Metabolic disorders affecting joints (eg alkaptonuria, haemochromatosis etc)
Heritable collagen disorders
Haemoglobinopathies
Haemophilia and other disorders of haemostasis
Regional disorders – paget's disease, hpoa, osteonecrosis, perthe's disease
Osteochondritis dissecans, transient regional osteoporosis

7) Neoplastic disease

Primary and secondary neoplastic conditions of connective tissue
Pigmented villonodular synovitis
Paraneoplastic musculoskeletal syndromes

8) Infection and arthritis:

Septic bone and joint lesions
Lyme disease
Mycobacterial, fungal & parasitic arthropathies
Viral arthritis
Aids
Post-infectious rheumatological conditions (eg rheumatic fever, post-meingococcal arthritis))

9) Miscellaneous:

Sarcoidosis, Eosinophilic fasciitis, Familial Mediterranean Fever, Relapsing polychondritis
Hypogammaglobulinaemia & arthritis, Amyloidosis, Sweets syndrome (neutrophilic dermatoses)

10) Occupational and sporting related problems

CLINICAL SKILLS & ATTITUDES

The trainee will learn to

A. Do a proper History taking & clinical examination: which will include

History – To be able to elicit and correctly interpret a history of the presenting symptoms of rheumatic disease ie pain, stiffness, weakness, loss of function & non-articular manifestations the disability and handicap caused by rheumatic disease the psychosocial problems associated with rheumatic disease other general medical problems **Examination** - To be able to undertake a physical examination as follows and identify

a) Normal anatomy and function: of the surface anatomical features of the shoulder girdle, elbow, hand & wrist, hip/pelvis, knee, ankle/foot, and spine; the normal range of movement (active and passive) of these joints and the actions of major muscle/tendons acting on these joints.

b) Abnormal anatomy and function:

The trainee should be able to identify general features of musculoskeletal pathology:
by inspection – swelling, erythema, muscle wasting or deformity
by palpation – tenderness of articular or specific periarticular structures, increased warmth, to distinguish bone from soft tissue swelling and identify fluctuance
by movement – abnormalities of active and passive movements, instability, the presence of tendon lesions by applying appropriate stress tests, and muscle wasting/weakness
to use these signs to identify inflammation or structural damage of limb joints, spinal joints, soft tissues (muscles, tendons, entheses, bursae), to identify the clinical signs associated with the extra-articular & systemic features, and to identify the general medical complications of rheumatic disease. In particular the trainee should be able to examine for

Shoulder pathology:
- Rotator cuff lesions
- Glenohumeral/capsular pathology
- Muscle wasting, proximal myopathy (deltoid)
- S/C joint pathology - OA, synovitis
- A/C joint pathology - OA, synovitis
- Shoulder pain due to pain referred from viscera or neck

Elbow pathology:
- Olecranon bursitis
- Elbow joint pathology
- Radio-ulnar joint pathology
- Medial or lateral epicondylitis

Hand & wrist pathology:
- Radiocarpal joint pathology
- Inf. radio-ulnar joint pathology
- 1st CMC, MCP or IP joint pathology
- Hand deformities
- Muscle wasting
- Flexor or extensor tenosynovitis or tendon nodules
- Rupture or attenuation of flexor or extensor tendons of fingers or thumb
- De Quervain's tenovaginitis
- Carpal tunnel syndrome

Hip/pelvic pathology:
- Trochanteric, iliopsoas, gluteal bursitis
- Hip joint pathology
- Real & apparent leg length inequality
- Si joint pathology
- Muscle wasting, proximal myopathy, trendelenberg sign
- Deformities of the hip, thomas' test
- Pathology of symphysis pubis
- Pathology of pelvis - fractures
- Hip pain due to pain referred from lumbar region
- Lesions of tendons and entheses

Knee pathology:
- Knee joint pathology, including internal derangements
- deformities
- muscle wasting, myopathy
- prepatellar, anserine bursitis
- popliteal cyst
- damage to collateral ligaments
- knee pain due to pain referred from hip or lumbar spine

lesions of tendons and entheses

Ankle & foot pathology:

Ankle (tibiotalar) pathology
subtalar/midtarsal joint pathology
mtp & ip joint pathology
lesions of the achilles tendon, enthesis and retrocalcaneal bursa
deformities of the ankle and foot
foot pain due to pain referred from lumbar spine
plantar fasciitis
tenosynovitis of tib post and peroneal tendons
rupture of tib posterior or Achilles tendon
lesions of bone (eg stress fracture)

Spinal pathology:

Cervical spine pathology
Thoracic spine pathology
Lumbar spine pathology
Spinal nerve root entrapment syndromes
Spinal deformities

Extra-articular pathology:

Raynauds phenomenon
Vasculitic skin lesions
Rheumatoid nodules
Heberdens & Bouchard's nodes
Rash – psoriasis, pustular psoriasis, onycholysis, balanitis, lupus rashes, erythema nodosum
Scleritis, episcleritis, conjunctivitis, iritis
Scerodactyly
Tophi
Other medical complications of rheumatic disease affecting internal organs
the normal musculoskeletal system and its' variations eg at extremes of age
the clinical signs associated with -
inflammation or structural damage of joints & periarticular structures (muscles, tendons, entheses, bursae and bone)
non-articular, systemic and other features of rheumatic disease
general medical complications of rheumatic disease
diffuse or regional pain disorders or somatisation disorders

B. Make a differential diagnosis – To be able to use the clinical findings to formulate a differential diagnosis and plan of investigation for patients presenting with –

Monoarthropathy
oligoarthropathy
polyarthropathy
axial arthropathy
multisystem disorder
muscle weakness
regional limb & spinal musculoskeletal pain disorders
unexplained musculoskeletal pain
rheumatological emergencies

C. Principle and Interpretation of Laboratory Test – To know the indications for and limitations of the laboratory and imaging techniques used in the diagnosis and management of rheumatic diseases. To be able, in the light of the clinical assessment, to select and interpret the most appropriate –

Laboratory investigations
Haematology
Biochemistry
Immunology
Histopathology
Bacteriology
Qualitative imaging techniques
Plain radiography
Ct
Mri
Ultra-sound
Radioisotope scanning
Quantitative techniques for assessing bone density
Dxa
Ultrasound

The Candidate will be required to perform some of these tests himself/herself

D. Learn management & communication:

To be able to communicate, explain and discuss with the patient the diagnosis, the need for further investigations the evidence-based management options, their risks and benefits and need for clinical monitoring; the need for orthopaedic/surgical intervention, and the
main risks and benefits; the patient's views on causation, management and the
risks and benefits of complementary or non-conventional approaches.
To be able to identify the need for - paramedical intervention, and aids to assist self care,
mobility or driving intervention by other relevant specialists including the neurologist, neurosurgeon, renal physician or rehabilitationist.
Education and self management techniques disability benefits or re-training to reduce the
socioeconomic impact of rheumatic disease on the patient.
Multidisciplinary pain management techniques and pain relieving procedures such as epidural and regional nerve blocks physical treatments such as manipulative and mobilization techniques.
To communicate these needs effectively with members of the multidisciplinary team (physiotherapist, occupational therapist, nurse specialist, orthotist, podiatrist or clinical psychologist) with other clinical colleagues with relevant support workers including medical social worker and voluntary agencies

E. Perform procedures – To be able to identify the correct indications for
joint injection/aspiration
soft tissue injection.
to aspirate and inject joints competently using the appropriate techniques
to recognise the macroscopic appearance of normal and abnormal synovial fluid (noninflammatory, inflammatory, haemorrhagic and septic)
to inject soft tissue lesions competently using the appropriate techniques (tennis/golfer's
elbow, carpal tunnel, tenosynovitis/flexor tendon nodules, bursitis, tendinitis and plantar fasciitis).

F. Perform clinical audit and assessing outcomes -

To be able to design, plan and carry out an audit project on a relevant clinical, topic. To achieve this the trainee will be required to specify an appropriate standard of

practice for auditing, identify suitable outcome measures, apply appropriate statistical methods to achieve a robust study, design and analysis of results, complete the audit 'loop' to demonstrate whether change in practice has occurred.

G. Learn managing a rheumatology unit -
To acquire the management skills relevant to participation in and leadership of a rheumatology team. To achieve this the trainee will be required to demonstrate effective time management, negotiating skills, participation in staff organization, and effective supervision of junior medical staff.

ASSESSMENT
The formative assessment will be observation of the trainee's performance in day to day practice. This requires close interaction between the trainee and trainer, allowing direct observation of the trainee's performance in a range of clinical settings. Formative assessment of knowledge will also include annual appraisals by external subject experts, assessment of presentations in clinics, grand rounds, seminars etc., and in future using MCQs, when a reliable and valid set has been developed. The log book will also be assessed periodically.

The summative assessment of competence will be done in the form of DNB Final Examination leading to the award of the degree of Diplomat of National Board in Rheumatology. The DNB final is a two-stage examination comprising the theory and practical part. An eligible candidate who has qualified the theory exam is permitted to appear in the practical examination.

Examination

a) Theory Exam:

I. The theory exam comprise of three papers (I,II & III), maximum marks 100 each divided into 1) Basic Sciences, 2) Principles and Practice of Rheumatology & 3) Recent Advances respectively.
II. There are 10 short notes of 10 marks each, in each of the papers.
III. Maximum time permitted is 3 hours for each paper.
IV. Candidate must score at least 50% in the aggregate of 3 papers to qualify the theory exam.
V. Candidate who have qualified the theory exam are permitted to take up the practical exam.

b) Practical Exam:

I. Maximum Marks: 300.
II. Comprises of Clinical Examination and Viva.
III. Candidate must obtain a minimum of 50% marks in the Clinical Examination (including Viva) to qualify for the Practical exam.
IV. There are a maximum of two attempts that can be availed by a candidate for Practical Exam.
V. First attempt is the practical exam following immediately after the declaration of theory results.
VI. The final attempt can be taken by the candidate within two years of passing the theory exam.
VII. Absentation from Practical Exam is counted as an attempt.
VIII. Appearance in first practical exam is compulsory;
IX. Requests for change in centre of exam are not entertained, as the same is not permissible.

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