SRI BALAJI VIDYAPEETH

ACCREDITED BY NAAC
WITH 'A' GRADE

DEEMED TO BE UNIVERSITY
DECLARED U/S 3 OF THE UGC ACT, 1956

NIRF - INDIA RANKINGS 2019 : 72 among Universities in India

FUGRA

(Fellowship in Ultrasound Guided Regional Anaesthesia)

SYLLABUS & REGULATIONS

2019-2020 ONWARDS

(As Approved in the Academic Council at the Meeting held on 22.05.2019)

Structured Curriculum for USGRA-2015

(Fellowship in Ultrasound Guided Regional Anaesthesia)

1. Course title

Fellowship in Ultrasound Guided Regional Anaesthesia.

2. Duration of the course

Six months.

3. Nature of the course

Full time

4. Aims and Objectives

On successful completion of the course the fellow should be able to demonstrate competency, knowledge and understanding, in execution of US guide Regional anaesthesia for better patient care.

5. Faculty of the course

Faculties from Department of Anaesthesiology and Critical Care, Radiology and Anatomy will be involved in the teaching and training of the fellow.

6. Proposed number of seats

Four candidates for every one year, two candidates per academic session. (January to June / July to December)

7. Eligibility criteria for admission

MD / DA / DNB in Anaesthesiology

8. Course content including teaching hours

Enclosed
Ref: curriculum.

9. Course syllabus

Enclosed
Ref: curriculum.

10. Practical, and projects if any, details of the same.

1. Fellow has to maintain a dedicated log book indicating the number of cases assisted, performed under supervision, and performed independently.

2. Fellow has to enroll himself into any one of the research projects involving regional anaesthesia and contribute to the designing, data collection, analysis and interpretation, manuscript writing and publication process of the research project.

11. Evaluation pattern

Enclosed
Ref: curriculum.

12. References

Sites BD[1], Chan VW, Neal JM et al. The American Society of Regional Anesthesia and Pain Medicine and the European Society of Regional Anaesthesia and Pain Therapy Joint Committee recommendations for education and training in ultrasound-guided regional anesthesia.
Reg Anesth Pain Med. 2009 Jan-Feb; 34 (1):40-6.

13. Composition of board of studies

Prof. M. Ravishankar. MD, FRCP. **- Chairman**
Quality Control officer and Departmental Leader ship.
Department of Anaesthesiology and Critical Care
MGMC & RI.

Dr. T. Sivashanmugam. MD, FRCP, DNB, PDCC. **- UGRA Co-ordinator**
UGRA coordinator,
Professor and Head
Department of Anaesthesiology and Critical Care
MGMC & RI.

Dr. Pankaj Kundra. MD. **- External Expert**
Curriculum Ratification and Assessor
Prof and Head
Department of Anaesthesiology and CCU
JIPMER.
Puducherry.

Dr. Balaventak Subramanian, DA, MD **- External Expert**
Senior Consultant Anaesthesiologist
Ganga Medical Centre and Hospital
Coimbatore

Dr. N. Krishnaveni **- Board Member**
Professor
Department of Anaesthesiology and CCU
MGMCRI

Dr. V.R. Hemanth Kumar **- Board Member**
Associate Professor
Department of Anaesthesiology and CCU
MGMCRI

Dr. Rani P. **- Board Member**
Associate Professor
Department of Anaesthesiology and CCU
MGMCRI

Dr. Dewan Roshan Singh **- Board Member**
Assistant Professor
Department of Anaesthesiology and CCU
MGMCRI

Dr. Jaya V. **- Board Member**
Assistant Professor
Department of Anaesthesiology and CCU
MGMCRI

14. Proposed fees to be collected.
50,000 /= (Fifty thousand rupees only

Curriculum

A curriculum should define three components, namely, Knowledge to be learned (Syllabus, Cognitive domain), Skills to be acquired (practical training, psychomotor domain) and the Attitude to be developed (Behavioral changes to be brought about, Affective domain) and the Teaching-Learning methods to be adopted to achieve the goals and the methods of assessment throughout the training period and at the completion of training.

1. **Knowledge to be learned (Theory, Cognitive domain)**

The candidate should be able to demonstrate a clear understanding of the following aspects in UGRA.

(i) Equipment

a) Physical principle behind the US image generation
b) Knobology, Transducers and its application.
c) Potential pitfalls and artifacts in US imaging of nerves.
d) Colour Doppler principle and its application
e) Special softwares available for better needle nerve visualization

f) Biological effects of US
g) Equipment disinfection and sterilization procedures.

(ii) Applied Anatomy

a) Regional innervation and anaesthesia strategies for head and neck surgery
b) Regional innervation and anaesthesia strategies for Upper limb
c) Regional innervation and anaesthesia strategies for thorax
d) Regional innervation and anaesthesia strategies for abdominal cavity
e) Regional innervation and anaesthesia strategies for Hip and Lower limb.
f) Potential US window and cross sectional anatomy for regional anaesthesia.
g) Epidural and Intrathecal space

(iii) Applied physiology

a) Nerve conduction and type of nerve fibers
b) Pain pathway
c) Pathophysiology of acute and chronic pain
d) Differential blockade
e) Nerve Injury – assessment, treatment and follow-up.
f) Intraneural injection.
g) Tourniquet implications

(iv) Applied Pharmacology

a) Pharmacokinetics and dynamics of Local anaesthetics
b) Pharmacokinetics and dynamics of LA adjuvants.
c) Pharmacokinetics and dynamics of Anticogulants.
c) Conscious sedation
d) LA Systemic Toxicity
e) Neurolytic agents.

2. Skills to be acquired (practical training, psychomotor domain)

At the end of 6 months the fellow should be able to demonstrate competency in performing various UGRA techniques in the following aspects.

a) Find the target of interest in the center of the image
b) Place the machine focus on the target structures
c) Place depth setting at 1 cm deep to target structures
d) Adjust gain, time gain compensation, and frequency as necessary
e) Appreciate Joint Committee recommended standardization of patient-screen relationships
f) Initiate the PART maneuvers to optimize image quality
g) Define relevant anatomy in each region including the ability to identify muscle, pleura, nerve, tendon, and bone
h) Scan anticipated needle trajectory with color Doppler to identify any unsuspected vascularity.
i) Define needle insertion technique using the Joint Committee recommended terminology (in-plane vs out-of-plane)

j) Recognize correct and incorrect distributions of local anesthetic
k) Understand potential difficulties and pitfalls.
l) Use of nerve stimulator along with USG to detect intraneural needle placement
m) Rescue blocks
n) Block failure management plans

3. **Attitude to be developed (Behavioral changes to be brought about, Affective domain)**

At the end of training programme the fellow should develop the attitude to

a) Communicate sensitively and effectively with patients and their families regarding ultrasound findings
b) Explain the merits and demerits of UGRA in terms that the patient can understand
c) Demonstrate team leadership/management skills for the management of an effective regional anesthesia service
d) Recognize costs associated with UGRA practice
e) Collaborate with other members of the health care team to ensure quality patient care
f) Use evidence-based, cost-conscious strategies in caring
g) Identify and acknowledge gaps in personal knowledge and skills in the care of patients presenting for UGRA
h) Use textbook and online and computer-based resources to broaden knowledge base regarding UGRA techniques
i) Perform electronic searches of the medical literature to identify articles that address the medical issues surrounding UGRA.
j) Understand and critically evaluate outcome studies related to the influence of UGRA on Perioperative outcome.
k) Develop time management skills to perform the required tasks in a reasonable amount of time with satisfactory quality.

4. Teaching and Learning Methods

Theory	**Practical**
Friday **3pm – 4pm** **1hrs /week** 1 × 20 = 20 hrs	**<u>Clinical training</u>** **Monday to Saturday** **8:30 to 2:30pm** • Observing / Facilitating / Conducting exclusive Ultrasound Guided Regional Anaesthesia list. • Minimum exposure: 20 blocks each for supraclavicular, infraclavicular, axillary, femoral and sciatic nerve blocks / TAP / ILIH.

	Tuesday / Wednesday **2:30 – 4pm - Pain clinic and vascular access clinic.** **Should be available in house to attend emergency calls for regional anaesthesia.**
<u>Teaching and Learning methods</u> Didactic lecture Microteaching Simulation based teaching (LA toxicity)	**<u>Cadaveric training</u>** Monday 2:30 – 3:30pm 1hr / week 1 × 20 = 20 hrs.
Log book maintenance **Research Activities.**	**<u>Phantom training</u>** Integral part of clinical Training

5. Formative assessment

Formative assessment form will be filled by the Coordinator at the end of every month and the feedback will be given to the candidate about his performance and suggestions to improve if any.

Table 10.1 Generic technical skills global rating scale

Respect for tissue	1	2	3	4	5
	Frequently used unnecessary force on tissue or caused damage		Careful handling of tissue But occasionally caused inadvertent damage	4	Consistently handled tissues with minimal damage
Time and motion	1	2	3	4	5
	Many unnecessary moves		Efficient time/motion but some unnecessary moves		Clear economy of movement and maximum effieciency
Instrument handling	1	2	3	4	5
	Repeatedly makes tentative or awkward moves with instruments by inappropriate use of instruments		Competent use of instruments but occasionally appeared stiff or awkward		Fluid moves with instruments and no awkwardness
Knowledge of instruments	1	2	3	4	5
	Frequently asked for wrong instrument or used inappropriate instrument		Knew names of most instruments and used appropriate instrument		Obviously familiar with the instruments and knew their names
Flow of procedure	1	2	3	4	5
	Frequently stopped procedure and seemed unsure of next move		Demonstrated some forward planning with reasonable progression of procedure		Obviously planned course of procedure with effortless flow from one move to the next
Use of assistants	1	2	3	4	5
	Consistently placed assistants poorly or failed to use assistants		Appropriate use of assistants most of the time		Strategically used assistants to the best advantage at all times
Knowledge of procedure	1	2	3	4	5
	Deficient knowledge		Knew all important steps of the operation		Demonstrated familiarity with all aspects of operation
OVERALL PERFORMANCE	1		3		5
	Very poor		Competent		Clearly superior

Reproduced from Naik V, Perlas A, Chandra D, Chung D, Chan V. An assessment tool for brachial plexus regional anesthesia performance: establishing construct validity and reliability. Reg Anesth Pain Med 2007; 32: 41–45.

6. Summative assessment

(i) Theory

Title	Regional Anaesthesia
Time	3hrs
Mark Distribution	Equipment and technology – 20% Applied Anatomy and physiology – 20 % Applied pharmacology – 10% RA strategies for specific surgery – 30 % Complications – 10% Recent advances – 10%
Pattern	10 short notes 10 × 10 = 100.
Pass	Minimum 45%

(ii) Practical (3Hrs)

Components:

The practical examination should be structured and objective as possible.

Clinical Cases	**No**	**Duration**	**Method of assessment**	**Marks**
Case discussion	2	80 min. (40 minutes each case 15 examination +25 discussion)	Bed side discussion and demonstration of Ergonomics / Image acquisition and optimization / Interpretation / Proposed needle trajectory	60

Structured Assessment (Mark distribution)

Segment	Percentage
Oral skills / presentation	10%

<table>
<tr><td colspan="2"><u>Preoperative assessment</u>
Surgical illness
General system pathology and its implication
<u>Risk stratification</u>
ASA classification
Perioperative Cardiovascular events
Preoperative neurological dysfunction
<u>Preparation</u>
Anti platelets
Bridging anti coagulants</td><td>30%</td></tr>
<tr><td colspan="2">Anaesthetic management</td><td rowspan="2">50%</td></tr>
<tr><td><u>Bed side clinical discussion</u>
Regional anaesthesia strategy
Merits and demerits of the proposed plan
Consent
Execution
Management plan for immediate, late complication and failure.</td><td><u>Bed side demonstration</u>

Patient positioning and Ergonomics
Image acquisition and optimization
Interpretation of sonoanatomy
Proposed needle trajectory</td></tr>
<tr><td colspan="2"><u>Post operative analgesia</u>
Modes
Merits and demerits
Pharmacological regimen
Complication and its management</td><td>10%</td></tr>
</table>

(iii) Viva-Voce (Structured)

1.	Equipment and PNB gadgets	20 Marks
2.	Drugs and Complication (clinical scenario)	20 Marks

Segments	**Total Marks**
Theory	100
Practical including viva	100 (60+40)
Grand Total	**200**
Pass	**Minimum 45% in two segments (Theory, Practical) but the aggregate should be more than 50%.**