

Fellowship in Interventional Radiology

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1. Program Overview

Name	:	Fellowship in Interventional Radiology
Duration	:	1 Year (Full-Time)
Intake	:	2 seats per academic year (1 st Jan to 31 st Dec)
Location Mode	:	Rohilkhand Cancer Institute Rohilkhand Medical College and Hospital
Mode	:	On-campus with clinical training and research

Program Objective:

To provide structured and didactic training with specific emphasis on interventional hands-on in all aspects of Interventional Radiology with specific emphasis on Oncological interventions enabling fellows to accurately diagnose, manage and rehabilitate patients.

2. Eligibility Criteria

- MD / DNB or equivalent degrees in either of the following disciplines: Radiodiagnosis/Radiology
- Registered with the appropriate medical council/license to practice.
- Candidates with any prior disciplinary issues or ethical violations are not eligible.

3. PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

The fellow should be able to:

- PEO1: Independently diagnose various diseases requiring radiological interventions and perform basic non vascular as well as vascular interventions including post procedure management.
- PEO2: Lead interventional radiology units in a hospital setting.
- PEO3: Participate actively in multidisciplinary clinical meetings.
- PEO4: Conduct meaningful research, audits, and contribute to academic work publications.

4. PROGRAM OUTCOMES (POS)

Upon successful completion of the program, the fellow will be able to:

- PO1: Assess patients requiring interventional radiological management including clinical, radiological and laboratory workup.
- PO2: Understand indications, contraindications and complications of various interventional radiological procedures
- PO3: Perform pre-procedure management and optimization of patients.
- PO4: Effectively perform commonly performed non vascular and vascular procedures.
- PO5: Effectively communicate with clinical teams and present findings at multidisciplinary meetings

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- PO6: Perform post procedure management of patients including complication management and follow up.
- PO7: Maintain quality control and standard operating procedures in line with NABH.
- PO8: Participate in academic teaching and mentoring of postgraduates.

5. PROGRAM SPECIFIC OUTCOMES (PSOs)

- PSO1: Evaluation of patients requiring interventional radiological procedure
- PSO2: Understanding indications and contraindications of various interventional radiological procedures
- PSO3: Prepare comprehensive treatment plan for the patient including post procedure management.
- PSO4: Coordinate with clinical team regarding treatment plan, expected outcomes and aid in decision making
- PSO6: Conduct audits, maintain logbooks, and contribute to quality improvement work.

6. COURSE OUTCOMES (COs)

At the end of the course, the fellow will be able to:

- CO1: Diagnose the patient requiring interventional radiological procedure.
- CO2: Formulate a proper treatment plan appropriate for the patient needs.
- CO3: Perform non vascular and vascular interventions including fine needle aspiration cytology, biopsies, percutaneous nephrostomies, percutaneous transhepatic biliary drainage, ablation procedures, diagnostic angiographies, angioplasties, stenting and embolization procedures.
- CO4: Manage patient post intervention including complications and follow up.
- CO5: Draft a research/academic work and publish an original research paper in indexed journal.

7. COURSE CONTENT MODULES

Module 1: Introduction to Interventional Radiology and its scope

- Hardware in Interventional radiology
- Vascular access and vascular closure devices
- Drugs in Interventional radiology
- Radiation hazard

Module 2: Basic non vascular interventions

- Aspiration and drainage of pleural, ascitic fluid and collections
- Percutaneous abdominal biopsies
- Lung and mediastinal biopsies
- Pain management and neural blocks

Module 3: Specialised non vascular interventions

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- Percutaneous nephrostomy
- Percutaneous biliary interventions
- Percutaneous gastrostomies
- Gastrointestinal stenting
- Tumor ablations

Module 5: Vascular interventions (Venous)

- Central venous catheter placement
- Management of varicose veins
- Management of deep vein thrombosis and pulmonary embolism
- Dialysis fistula management
- Hepatic venous interventions including transjugular biopsies, TIPS, shunt occlusion and portal vein embolization

Module 6: Vascular interventions (Arterial)

- Trauma management
- Management of stroke and vascular emergencies of head and neck
- Carotid artery stenosis
- Aortoiliac, femoral and below knee interventions
- Acute gastrointestinal hemorrhage
- Renal artery and mesenteric stenosis management
- Management of visceral aneurysms
- Management of hepatic and renal malignancies
- Embolization procedures including bronchial, uterine, prostatic, genicular, varicocele embolization

Module 8: Tumour Boards & Clinical Correlation

- Multidisciplinary meeting
- Coordinated decision making with clinical colleagues

Module 9: Research Methodology

- Study design, data analysis, poster/paper writing

Module 10: Teaching & Professional Skills

- Presentations, CME coordination, ethics, communication

8. Curriculum Structure

8.1 Theory Syllabus

I. Basics of interventional radiology

- Hardware in Interventional radiology
- Vascular access and vascular closure devices
- Drugs in Interventional radiology
- Radiation hazard and safety in Interventional radiology
- Research Methodology: Study design, biostatistics, ethics in research

II. Non vascular interventions

- Aspiration and drainage of pleural, ascitic fluid and collections

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- Percutaneous abdominal biopsies
- Lung and mediastinal biopsies
- Lymphatic interventions
- Percutaneous nephrostomy
- Percutaneous biliary interventions
- Percutaneous gastrostomies
- Gastrointestinal stenting
- Tumor ablations
- Pain management and neural blocks

III. Vascular interventions

- Central venous catheter placement
- Management of varicose veins
- Management of deep vein thrombosis and pulmonary embolism
- Dialysis fistula management
- Trauma management
- Management of stroke and vascular emergencies of head and neck
- Carotid artery stenosis
- Basics of aortic interventions
- Aortoiliac, femoral and below knee interventions
- Acute gastrointestinal hemorrhage
- Renal artery and mesenteric stenosis management
- Management of visceral aneurysms
- Hepatic interventions including transjugular biopsies, TIPS, shunt occlusion and portal vein embolization
- Management of hepatic and renal malignancies
- Embolization procedures including bronchial, uterine, prostatic, genicular, varicocele embolization

8.2 Practical Training

- Clinical aspects of interventional radiology
- Non vascular and vascular interventions
- Patient counselling and post procedure management
- Multidisciplinary meeting participation and case presentations

9. Teaching and Learning Methods

- Didactic lectures and seminars
- Case-based learning
- Interactive multidisciplinary meetings
- Hands-on training
- Research presentations
- Regular formative assessments

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10. Clinical Exposure

- Diagnosis and interpretation of clinical, radiological and laboratory investigations
- Interventional radiological procedures including fine needle aspiration cytology, biopsies, percutaneous nephrostomies, percutaneous transhepatic biliary drainage, ablation procedures, diagnostic angiographies, angioplasties, stenting and embolization procedures.
- Participation in multidisciplinary meetings
- Exposure to various clinical departments
- Interaction with clinical colleagues aiding in patient management

11. Research Project

- Each fellow will undertake 1-2 original academic works related to any field of Interventional Radiology under course director.
- Encouragement to publish original research in indexed journals.

12. Assessment and Evaluation

- Continuous formative internal assessment via case discussions /log book etc. (30%)
- Final examination comprising (40%)
 - Theory exam (essay and short notes)
 - Practical/viva voice exam (case presentations - long and short)
- Academic work submission (30%)

13. Code of Conduct Policy

- Fellows must maintain professional ethics in all academic and clinical activities.
- Timely attendance and active participation are mandatory.
- Disclosure of any conflict of interest related to diagnostics, research, or patient care is required.
- Fellows involved in unethical behaviour or malpractice may face disciplinary action.

14. Career Opportunities

- Consultant Interventional Radiologists in hospitals
- Academic faculty positions in medical colleges
- Leadership roles in hospitals and medical colleges
- Research scientist positions
- Opportunities in pharmaceutical and biotech companies focusing on Interventional Radiological equipment

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15. Training Schedule:

- Dedicated Lectures and seminars
- Allotment of Dissertation
- Procedural planning and assistance in interventional radiological procedures

Stage 1: Non vascular interventions

- Preprocedural clinical evaluation and investigations
- Procedural planning
- Hands on procedural training including post procedure management
- Multidisciplinary meeting participation

Stage 2: Vascular Interventions

- Preprocedural clinical evaluation and investigations
- Procedural planning
- Assistance in interventional radiological procedures
- Hands on procedural training
- Post-surgery patient care and planning
- Multidisciplinary meeting participation

16. Faculty Profiles:

- Dr Mohit Gambhir, Interventional radiologist, Rohilkhand Medical College & Hospital - Course Director
- Dr. Arjun Agarwal, Mch (Surgical oncology) -Prof & Head, Department of Surgical Oncology, Rohilkhand Medical College & Hospital
- Dr Ashish Kamathan, Mch (Surgical Oncology) - Assistant Professor, Department of Surgical Oncology, Rohilkhand Medical College & Hospital
- Dr Laxman Pandey, MD (Radiation Oncology), Department of Radiation Oncology, Rohilkhand Medical College & Hospital
- Dr Siddharth Arora, MD (Radiation Oncology), Department of Radiation Oncology, Rohilkhand Medical College & Hospital

17. Conflict of Interest & Ineligibility

To maintain the academic integrity and ethical standards of the Fellowship in Oral Oncology, the following candidates shall not be eligible to apply:

I. Employment/Age Conflicts

- Individuals already holding a full-time appointment that prevents them from fulfilling full-time academic responsibilities during the fellowship.
- Candidates enrolled in any other fellowship, residency, or academic program simultaneously.
- Candidates who already have enough work experience in Interventional Radiology as a faculty/staff member shall be ineligible.

II. Professional Misconduct

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- Applicants who have faced disciplinary action, suspension, or license cancellation by a medical council or any competent regulatory authority.

III. Financial or Ethical Conflict

- Candidates with ongoing legal or ethical investigations related to patient misdiagnosis, or clinical fraud.
- Any applicant with declared or undeclared financial interest in may pose a bias in training or evaluation.

IV. Academic Dishonesty

- Prior record of plagiarism, data falsification, or unethical research conduct disqualifies participation.