



PDCC IN GLAUCOMA CURRICULUM

AIIMS KALYANI



JANUARY 8, 2024

ACADEMIC SECTION
AIIMS Kalyani

Course Curriculum

Post Doctoral Certificate Course (PDCC) In Glaucoma

1) Name of the subject: Post Doctoral Certificate Course (PDCC) in Glaucoma

2) Description:

a. Goals

The goal of the 12-months glaucoma Post Doctoral Certificate Course is to provide

☐ Advanced training for diagnosis and medical and surgical management of glaucoma

as well as management of difficult glaucoma problems.

☐ The program's emphasis is on providing adequate clinical experience that allows

PDCC Residents to become thoroughly familiar with the state-of-the-art diagnosis and

therapeutic equipments.

☐ Opportunities for research experience focusing on glaucoma.

The Glaucoma Post Doctoral Certificate Course thus offers the opportunity to learn all

aspects of the diagnosis and management of primary, secondary and complicated

glaucoma problems in patients of all ages. The Residents also may get opportunities to

treat related anterior segment disorders, including cataract, based on availability of surgical

volume.

b. Statement of the Objectives of the course

i) Knowledge

The clinical training Post Doctoral Certificate Course focuses on diagnosis and management of primary and secondary glaucomas. The Residents gets to observe and participate in medical, laser and surgical management of glaucoma under the supervision of faculty members.

ii) Skills and Attitudes

The institution is equipped with the latest state of art diagnostic equipment including imaging modalities such as the optical coherence tomography , automated perimetry examination with Humphreys Field Analyser and anterior segment imaging. Applanation tonometry and 4-mirror gonioprisms, form part of routine glaucoma workup. The department is also equipped with Perkins tonometer instruments and 1 hand held slit lamp instruments.

The Resident will be able to familiarize himself/herself with all these instruments. Photographic services including slit lamp photography, goniphotography and disc photography are available. The Resident also gets to observe assist and perform laser and incisional glaucoma surgery. The institution is equipped with various lasers for management of glaucoma including Yag laser and frequency doubled ND - Yag Laser for selective laser trabeculoplasty.

This Post Doctoral Certificate Course program thus involves comprehensive patient care instruction with state of the art diagnostic and surgical equipment care backed by extensive work experience. The course provides them with up-to-date skills to ensure that diagnosis, treatment and surgery are accurate and timely. A patient friendly and compassionate attitude is inculcated at every stage of the knowledge and skills transfer program .

iii) Communication abilities

The institute conducts Periodic sessions to train the residents in the following:

- ☐ Communication skills: oral and written
- ☐ Leadership skills: through participation in community work as the working head of the camps and screening programmes
- ☐ Use of technology for teaching and communication
 - o Internet to access journals, emails and websites
 - o Pubmed and Medline search for bio-medical literature
 - o Training sessions on PowerPoint presentations, use of Microsoft excel for statistics and projections

c. Course contents (Syllabus)

iv) Essential knowledge

BROAD OUTLINE OF SYLLABUS: MAJOR AREAS

a) Congenital and childhood

- ☐ Epidemiology, inheritance, and pathophysiology

- ☐ Diagnosis and management

b) Open angle glaucoma

- ☐ Epidemiology
- ☐ Pathophysiology
- ☐ Clinical features: visual field changes and visual field examination techniques,

- ☐ Measurement and significance of intraocular pressure
- ☐ Optic disc changes and their assessment
- ☐ Medical, laser and surgical treatments

c) Angle closure glaucoma

- ☐ Pathophysiology
- ☐ Medical, laser and surgical treatments

d) Glaucoma syndromes

- ☐ Clinical features and management of:
 - ☐ Pseudoexfoliation syndrome
 - ☐ Pigment dispersion syndrome
 - ☐ Secondary glaucomas

Other desirable outcomes :

- ☐ Evaluation and management of a patient with cataract and the management of the postoperative complications
- ☐ Evaluation and timely referral of patients with more advanced diseases in the

following subspecialties: Cornea, Glaucoma, Retina, Oculoplasty, Uveitis, Paediatric

Ophthalmology and Strabismus

☐ Communication basics: communicating with other doctors, paramedical personnel, community workers etc

☐ Optional: based on candidate's interest, performance and availability of case load, fellows may get to do commonly performed surgical work in other subspecialties

v) Essential Investigation and Diagnostic Procedures (Medical Curriculum)

☐ **Broad Management Principles:**

☐ The clinical evaluation of the retinal nerve fibre layer .

☐ The appropriate selection and interpretation of visual fields.

☐ The drawing up of an individual management plan leading to a target IOP.

☐ Pharmacological lowering of IOP

☐ **Practical skills:**

To have undertaken (under supervision until proficient) the following:

☐ Applanation tonometry.

☐ Assessment of peripheral and central anterior chamber depth including pachometry.

☐ Assessment of irido-corneal angle structures by gonioscopy.

☐ Methods of optic disc cup measurement.

☐ Visual field testing, including Goldmann/kinetic perimetry and

automated/static perimetry.

☐ **Specialized procedures:** OCT

vi) **Procedural and Operative Skills:**

(SURGICAL CURRICULUM)

Core competence

1. Trabeculectomy, bleb management and laser suture lysis.
2. Management of the complications of trabeculectomy, including overfiltration, flat anterior chamber etc.
3. Management of glaucoma in the presence of cataract.
4. Cycloablation (including cyclodiode laser) for refractory glaucoma.
5. Laser trabeculoplasty.
6. Management of acute angle closure glaucoma, including medical and laser treatment.

Desirable clinical experience

- ☐ Management of malignant glaucoma.
- ☐ Use of antimetabolites in trabeculectomy.
- ☐ Use of drainage tubes/stents in complex glaucoma surgery.
- ☐ Non-penetrating glaucoma surgery.

Course Methodology:

1st Month:

Orientation regarding work up of glaucoma cases ie performing slit lamp examination, direct ophthalmoscopy, examination with 78 D lens and gonioscopy and maintenance of case records

2nd and 3rd Month:

Performing and interpreting HFA, OCT and UBM scan.

Observing lasers

4th and 5th Month:

Performing YAG laser capsulotomy and iridotomy. Observing and assisting surgeries

6th Month:

Observing and assisting surgeries

7th to 8th Month:

Assisting surgeries and performing surgeries independently

9th and 12th Month:

Observing and performing surgeries independently

d. Teaching / Learning Activities

☐ Departmental activities .

☐ Practical clinical training of post graduates (MD in ophthalmology):

PDCC Residents are expected to participate in the training of MD candidates. This can involve activities such as discussion of cases in an informal way on a regular basis to

formal presentations in weekly meetings.

☐ Training of paramedicals, and community health workers: Fellows may be

requested by advanced notice to participate in training of paramedical personnel

in the hospital or team members in community level. Hands on experience of

conducting camps, communication and training of field workers is expected to

provide excellent experience and learning for the fellows.

☐ Journal Access: Our institution has access (both hard copies and online) to peerreviewed,

reputed journals. The fellows are guided by their faculty to regularly

update their knowledge by reviewing latest articles from these journals.

□ Participation in state level and national level conferences, CMEs, seminars:

fellows are expected to present at least one paper/ poster during their tenure in a CME meeting outside of the institution.

□ Research Methodology Training: Periodically (every 3-6 months) training will be organized to cover the following topics:

- o Research paper writing : basics

- o Basics of epidemiology and biostatistics

- o Regulatory issues in human research: Indian regulations and others

- o Good clinical Practice (GCP) training

e) (1) Participation in Departmental Activities

a. **Journal review meetings:** Will be held once in every 2 weeks. One of the presenters will (typically a Senior Resident or a post-graduate) presents an interesting article from a recent journal. The validity of research methods, the findings, the applicability, and clinical implications of the findings will be critically reviewed and discussed. One of the faculty members moderates the entire proceedings and will summarize the discussion at the end of the session.

b. **Seminars:** Subject seminars will be held once a week. Topics of importance are covered. Either the fellow or a faculty will present a detailed account of a particular topic for ex. : a diseases or drug or new therapy etc. Interaction is strongly encouraged in such presentations.

c. Clinico-pathological/ Radiological conferences: Faculty from AIIMS Kalyani

will be invited to discuss challenging cases wherein a diagnosis

was finally achieved

d. Interdepartmental meetings: These will be of great importance in better

understanding of diseases which have involvement of different disease

processes or involve multiple structures in the eye. Also some the patients

may have associated systemic conditions and having a meeting with other

specialists such as physicians, neurologists, endocrinologists may be of great

importance.

e. Community work- camps/ field visits: Residents are expected to participate in

community programs.

f. Clinical case presentations: Every week, interesting and important cases will

be discussed. Learning by case study approach is a well established method

of training and Residents will be strongly encouraged to discuss cases with the

mentors on a regular basis.

g. Participation in conferences/ presentation of papers: PDCC Residents are strongly

encouraged to work with faculty in producing good quality research and they are encouraged

to present and publish such papers. One paper presentation or a journal article

submission is required for course completion.

(2) Rotation and Posting in other departments (duration and Learning requirements to

be specified)

a) Residents will be rotated through other specialties in ophthalmology to

allow for understanding of co-management, referral practice and academic challenges.

b) For 6 weeks the Residents work in rotation with faculty members in the various subspecialties. 1 week each in :

- ☐ Cornea including eye banking
- ☐ Glaucoma
- ☐ Retina including medical and surgical retina
- ☐ Orbit and oculoplasty,
- ☐ Paediatric Ophthalmology and Strabismus
- ☐ Uveitis

During this period the fellow would also visit, discuss and learn from interaction with the relevant para-clinical departments like microbiology and pathology.

Learning requirements during the subspecialty rotation

- ☐ Examination and management of simple diseases
- ☐ Assisting and Performing common procedures and surgeries
- ☐ Learning Evaluation and timely referral of patients with more advanced diseases

3. Training in teaching skills and research methodology

A half a day session will be organized every 3-6 months that will train all the post graduates and fellows in the following:

- ☐ Communication skills: oral and written

- ☐ Use of technology for teaching and communication
 - o Internet to access journals, emails and websites
 - o PowerPoint presentations, excel for statistics and projections
 - o Pubmed and Medline search
- ☐ Research Methodology
 - o Research paper writing : basics
 - o Basics of epidemiology and biostatistics
 - o Regulatory issues in human research: India regulations
 - o Good clinical Practice (GCP) training

f. Monitoring of Teaching and Learning Activities

Monitoring of Learning

Periodic evaluation of log book (end of every month):

- ☐ Residents are expected to document clinical and surgical work in a systematic manner in a logbook that is specifically designed for this purpose. Academic program participation should also be documented in the log book.
- ☐ Periodic Internal examinations: clinical assessment (end of every 3 months): Clinical assessment would be held at the end of every 3 months. This may include clinical case presentation, and clinical case quiz.
- ☐ Theory and Practical examination at the end of the course

Monitoring of operative skills:

- ☐ Surgery performed under supervision: Residents will perform surgeries under

supervision till an appraisal is given by the faculty regarding the competence level to handle independent surgeries.

□ Review of video recorded surgeries with the trainees (once a month): Faculty members will review the approach, alternatives and potential ways of handling complications if any while reviewing an actual surgical procedure. Such learning experience can be supplemented by viewing additional videos of surgeries performed by the faculty.

Monitoring of teaching and communications skills:

□ Grading and appraisal of post graduate teaching seminars: Faculty members will critically appraise a Residents of their performance during a seminar or case presentation that they may do for the post graduates.

□ Encouraging presentation in conferences at state and national levels: Residents will be encouraged and trained to present papers at conferences outside of the institution.

Monitoring of research:

Residents are expected to complete at least one project work during the course duration which will result in one submission to a conference and or a journal

h. Recommended Books and Journals:

□ The Current American Academy of Ophthalmology Basic and Clinical Science Course (12 volumes)

- Abrams D. Duke Elder's *Practice of Refraction*. Churchill Livingstone. This text covers the basic principles of refraction.
- Duane's Clinical Ophthalmology By William Tasman, Edward A. Jaeger, Thomas David Duane 2005
- Principles and Practice of Ophthalmology by Daniel Myron Albert, Frederick A. Jakobiec - 2000. *Principles and Practice of Ophthalmology*. W B Saunders.
- Ophthalmology, 2nd Edition By Myron Yanoff, MD and Jay S. Duker, MD
- Kanski JJ. *Clinical Ophthalmology*. Butterworth/Heinemann. Fifth Edition
- The The Wills Eye Manual: Office and Emergency Room Diagnosis and Treatment of Eye Disease (Paperback)
- Shields Text Book of Glaucoma - Fifth Edition. R Rand Allingham
- Field of vision. Jason J S Barton
- Glaucoma- The Requisites. Jay H Krachmer
- Illustrated Automated Static Perimetry. G R Reddy
- Essential perimetry. 3rd edition. Michael Patella
- Atlas of complications in Ophthalmic Surgery. Theodore Krupin
- Shields text book of glaucoma -4th edition. M. Bruce Shields
- Atlas of visual fields. Donald L Bundenz