Teaching modules for DM Cardiology (3years) K.G.M.U

It shall includes to develop and assess various domains of cardiology

A. Clinical skills development and assessment
B. Intervention Procedures training and assessment – Coronary Angiography (Radial Route & Femoral Route , coronary Angioplasty, Balloon Valvotomy(BPV, BAV, BMV, Permanent Pacemaker, AICD, CRT implantation, temporary pacemaker implantation, pericardiocentesis, structural Heart Disease intervention - ASD closure, PDA closure, catheterization studies, oximetric analysis
C. Non – invasive skills development and assessment (2D-Echo, TMT, Holter)
D. Soft skills development
E. Recent updates in Cardiology – Journal Club
F. Approach to -
    - Valvular Heart Disease
    - Ischemic Heart Disease
    - Congestive Heart Disease
G. Evidence Based prescription writing
H. Evidence Based Medicine Principles
I. Emergency Cardiac Care
J. Basics of preventive Cardiology

Training Parameters:

Non Invasive Training

Minimum No. of Procedures Number of Echo's done — 300

Number of TMT procedures — 150

Number of Holter analysed — 50

Invasive Lab Training

No. of temporary pacemakers done — 50

Number of permanent pacemakers assisted or done — 5

Number of cardiac cath procedures including Interventions assisted or done — 400

Research work :

Each resident is being allotted one thesis and expected to complete it 6 month before final examination and two have at least 2 original paper submitted in index journal .He is expected to have at least one presentation of thesis as posted or oral presentation at national and international level. Basic of research methodology are being covered in module based teaching .Once weekly journal club is being conducted .

Note:At end of course all these should be certified by Head of Department in form of logbook entries

DM cardiology Course K.G.M.U

At end of 3 years of training the candidate is expected to have basic insight into cardiovascular science .Below are the various domains which are mentioned in three levels of must ,should know and may know ,that candidate should be trained during 3 years of rigorous training in DM Cardiology course and evaluated in same manner .

A. Must Know

1. Basics of ECG interpretation
2. Echocardiography basics & beyond
3. Temporary trans venous pacing procedure
4. Pericardiocentesis
5. Management of SVT – NQT
6. Management of VT – WQT
7. Management of AF – Guideline basics
8. CPR – B/S – Guideline basics
9. ACLS Basics & Guidelines
10. Management of cardiogenic shock
11. Approach to hypertension patient
12. Basics of clinical cardiology

13. Approach to chest pain & critical evaluation & management
14. STEMI – Management
15. ACS/USA/NSTEMI – Management protocol
16. Stable Ischemic Heart disease & Management
17. Approach to valvular heart disease
18. History & physical examination
19. Mitral regurgitation – natural History, clinical feature & symptoms
20. Aortic regurgitation – natural History, clinical feature & symptoms
21. Aortic stenosis – natural History, clinical feature & symptoms
22. Aortic stenosis – natural History, clinical feature & symptoms
23. Rheumatic fever
24. Infective endocarditis
25. Basics of coronary angiography
26. Cardiac catheterization principals
27. TVUS – Basics & Interpretation
28. Recent guideline based management of dyslipedemia
29. Management of Acute Limb Ischemia
30. Management of Acute pulmonary Embolism
31. Aortic dissection management
32. Congenital heart disease – Basic approach
33. Management of T of like physiology
34. Eisenmenger syndrome
35. Catheterization & oximetary analysis in cyanotic CHD

B. Should Know

1. Evidence based cardiology
2. Basics of research methodology
3. Basics of exercise testing & various protocols
4. Evidence in favor of clopidogrel in ACS?STEMI (Trials)
5. Evidence in favor of ACE inhibitors (Trials)
6. Evidence in favor of statins in 1 & 2 (Trials)
7. Evidence in favor of Beta Blockers
8. Evidence in favor of Aspirin in 1 & 2

9. CT Coronary Angiography – Evidence, Basics & interpretation
10. Nuclear stress testing – basics & implication
11. Cardiac MRI – Basics & Interpretation
12. Management of LQTS/Brugada /CPVT
13. Sudden cardiac death
14. Approach to syncope
15. IABP insertion technique & indicating
16. Pre surgical risk stratification in non cardiac surgery
17. Myocarditis – Etiopath clinical feature & Mx
18. Risk stratification on basic of score (framingham's risk)
19. Systemic hypertension – Recent update and guideline
20. Soft skill heating – Patient & Doctor relationship
21. Care of end stage Heart failure
22. Status of primary PCI Evidence & Meta analysis
23. Role of thrombus section in STEMI evidence till date
24. Role of GP2b3a inhibitors – evidence till date
25. When to intervene in NSTEMI
26. FFR – Basics & Evidence in favor of FFR
27. Prinzmetals Angina
28. Refractory Angina and How to manage?
29. Echo evaluation of patient with prosthetic valve
30. Multivalular heart disease – management
31. Endocrinologic disease and cardiovascular management
32. Neurological disease and cardiovascular management
33. Anesthesia and non cardiac surgery
34. Cardiovascular disease and pregnancy
35. Cardiovascular disease in women
36. Trouble shooting in pacemaker/ICD malfunction
37. Cath finding s in congenital heart disease
38. Cath findings & CP & RCMP
39. Carotid artery stenting & CEA
40. DCMP
41. HCM – Risk specification & management
42. Myocarditis – stages & management
43. ARVD – Tark force criteria
44. Chemical cardilomyopathy
45. Clinical assessment of HF
46. Role of biomarkers in HF

47. Evidence based management of HF
48. HF Preserved EF
49. Cardiac transplant – what cardiologist should known
50. Aortic aneurysm management
51. Classification of cyanotic CHD
52. ECG in cyanotic CHD
53. Chest X-Ray cyanotic CHD
54. Etiopathogenesis & Management of PAH

C. May Know

1. Critical evaluation of clinical trials
2. Basics of ventilator care
3. Exercise based cardiac rehabilitation
4. Complementary & alternating measuring in management of heart failure
5. Bleeding scores (crusade) (GRACE, TIMI) BARC usefulness
6. Fundamental trials in SIHD – Courage, fame – 2 Trial
7. Novel agents for management of STEMI
8. Discussion – Meta analysis of Primary PCI
9. Vaccine for RF
10. Indian Perspective in RHD
11. Interface between CAD & CKD
12. Cardiovascular disease in elderly
13. Pacemaker timing cycles
14. Molecular Imaging in cardiovascular disease
15. Autonomic disorder and CV disease
16. TVUS – Basics & Interpretation
17. OCT – Basics & Interpretation
18. Novel therapies in management of lipid disorders
19. Renal artery stenting – Evidence till date
20. Device based Management of HF – ICD, BIV – evidence till date
21. ECMO – role of present
22. Newer device related therapy for HF
23. TAVI, percutanous mitral valve

Weekly curriculum for DM Cardiology given below

Daily morning class would be conducted from 8.30 a.m to 9.30 a.m on week days except Sunday

Monday	-	Journal club	-	SR-1
Tuesday	-	Seminar	-	SR-II
Wednesday	-	Clinical case presentation	-	SR-III
Thursday	-	seminar	-	SR-I
Friday	-	Interesting Echo discussion	-	SR-II
Saturday	-	Interesting Angio/Cath Study	-	SR

Module based learning:

For better understanding of various topics in cardiology the curriculum is being divided into various modules

Modules for SR – 1st

1
a. Evidence based cardiology
Basics of research methodology
b. Critical evaluation of clinical trials
c. Basics of ECG interpretation

2
a. Basics of exercise testing & various protocols
b. Echocardiography basics & beyond
c. Temporary trans venous pacing procedure

3
a. Pericardioventesis
b. Evidence in favor of clopidogrel in ACS?STEMI (Trials)
c. Evidence in favor of ACE inhibitors (Trials)

4
a. Evidence in favor of statins in 1 & 2(Trials)
b. Evidence in favor of Beta Blockers
c. Evidence in favor of Aspirin in 1 &2

Modules for SR- I

5
a. CT Coronary Angiography – Evidence, Basics & interpretation
b. Nuclear stress testing – basics & implication
c. Cardiac MRI – Basics & Interpretation

6
a. Management of SVT – NQT
b. Management of VT – WQT
c. Management of LQTS/Brugada/CPVT

7
a. Management of AF – Guideline basics
b. CPR – B/S – Guidelines based approach
c. Sudden cardiac death

8
a. Approach to syncope
b. Basics of ventilator care
c. ACLS Basics & Guidelines

SR – I

9
a. Management of cardiogenic shock

b. IABP insertion technique & indicating
c. Pre surgical risk stratification in non cardiac surgery

10
a. Myocarditis – Etiopath clinical feature & Mx
b. Risk stratification on basis of score (framingham's risk)
c. Exercise based cardiac rehabilitation

11
a. Approach to hypertension patient
b. Sustaining hypertension – Recent update and guideline
c. Soft skill heating – Patient & Doctor relationship

12
a. Complementary & alternating measuring in management of heart failure
b. Basics of clinical cardiology
c. Care of end stage Heart failure

Modules for SR – 2nd

Coronary artery diseases

1
a. Approach to chest pain & critical evaluation & management
b. STEMI – Management
c. Status of primary PCI Evidence &Meta analysis

2
a. Role of thrombus section in STEMI evidence till date
b. Role of GP2b3a inhibitors – evidence till date
c. ACS/USA/NSTEMI – Management protocol

3
a. bleeding scores (crusade) (GRACE, TIMI) BARC usefulness
b. When to intencene in NSTEMI
c. Stable Ischemic Heart disease & Management

4
a. FFR – Basics & Evidence in favor of FFR
b. Fundamental trials in SIHD – Courage, fame – 2 Trial
c. Prinzmetals Angina

a. Refractory Angina and How to manage?
b. Novel agents for management of STEMI
c. Discussion – Meta analysis of Primary PCI

Valvular Heart Disease

5
a. Approach to valvular heart disease
b. History & physical examination
c. Mitral regurgitation – natural History, clinical feature & symptoms

6
a. Aortic regurgitation – natural History, clinical feature & symptoms
b. Aortic stenosis – natural History, clinical feature & symptoms
c. Aortic stenosis– natural History, clinical feature & symptoms

7
a. Echo evaluation of patient with prosthetic valve
b. Multivalular heart disease – management
c. Rheumatic fever

8
a. Infective endocarditis
b. Vaccine for RF
c. Indian perspective in RHD

SR –II module

9
a. Endocrinologic disease and cardiovascular management
b. Neurological disease and cardiovascular management
c. Interface between CAD & CKD

10
a. Anesthesia and non cardiac surgery
b. Cardiovascular disease and pregnancy
c. Cardiovascular disease in women

11
a. Cardiovascular disease in elderly
b. Pacemaker timing cycles
c. Trouble shooting in pacemaker/ICD malfunction

12
a. Infection endocarditic
b. Molecular Imaging in cardiovascular disease
c. Autonomic disorder and CV disease

SR – 3 Module

1
a. Basics of coronary angiography
b. Cardiac cathetrarization principals
c. TVUS – Basics & Interpretation

2
a. OCT – Basics & Interpretation
b. Cath finding s in congenital heart disease
c. Cath findings & CP & RCMP

3
a. Recent guideline based management of Dyslifendemia
b. Novel therapies in management of lipid disorders
c. Carotid artery stenting V & CEA

4
a. Renal artery stenting – Evidence till date
b. Management of Acute Limb Ischemia
c. Management of Acute pulmonary Embolism

Modules for SR- 3,

5
a. DCMP
b. HCM – Risk specification & management
c. Myocarditis – stages & management

6
a. ARVD – Tark force criteria
b. Chemical cardilomyopathy
c. Clinical assessment of HF

7
a. Role of biomarkers in HF
b. Evidence based Management of HF
c. Device based Management of HF – ICD, BIV – evidence till date

8
a. ECMO – role of present
b. HF with present EF
c. Cardiac transplant – what cardiologist should known

Modules SR-III

9
a. Aortic aneurysm management
b. Aortic dissectionmanagement
c. Congenital heart disease – Basic approach

10
a. Classification of cyanotic CHD
b. ECG in cyanotic CHD
c. Chest X-Rey cyanotic CHD

11
a. Management of Tof like physiology
b. Eisenmenger syndrome
c. Etiopathogenesis & Management of PAH

12
a. Catheterization & oximetary analysis in cyanotic CHD
b. Newer device related therapy for HF
c. TAVI, percutanous mitral valve