From: "ROOT" <root@sctimst.ac.in>
To: "ROOT" <root@sctimst.ac.in>
Date: 22/01/2025 08:03 AM
Subject: CPC Clinical Protocol 22.01.2025

Dear All,
The next wednesday CPC of the session will be held tomorrow, **January 22, 2025** at 08.00 hours (IST) in **Lecture Theatre 1**, Nehru Hospital, PGIMER, Chandigarh.

The session will also be available on the Webex platform. Kindly follow the link below to join.

https://india-edu.webex.com/india-edu/j.php?MTID=m1cb4b75b29a2cff53f63e5991b9bab7b

In case you join in thru WebEx, kindly **ensure that your microphone and camera are switched off** and **PLEASE DO NOT SHARE YOUR SCREEN**.

The Clinical handout of the case to be discussed is attached herewith.
The clinical protocol will be discussed by ***Dr. S Reddy, Department of Cardiology.*** Radiology will be discussed by ***Dr. Arun.*** Autopsy pathology will be presented by ***Dr. Aravind Sekar.***

Yours sincerely,

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Regional Resource Centre, North
Department of Telemedicine
PGIMER, Chandigarh

STAFF CPC (22.01.25)

AK, 37/M	**DOA: 11**/05/2023	**Clinician In charge:** Dr Ankur Gupta
CR No-2023037705 **R/O** Panipat, Haryana	**DOD**: 13/05/2023 **Total Stay**- 1 ½ days	**Clinical Discussant:** Prof. S Reddy **Pathologist**: Dr. Aravind Sekar **Radiologist: Dr Arun**

Background History

GMCH-32: Admitted 25/04/23 to 11/05/2023 in CCU

- **Presenting complaints:** Breathlessness on exertion NYHA class II x 6months; gradually progressive increasing to NYHA class III for 2 weeks. Orthopnoea (+)
- Swelling of bilateral lower limbs for 6 months. No decreased urine output
- Chest pain, non-radiating (atypical in nature)
- **Examination**: Pulse-103/min, BP- 118/70 mm Hg
- Bilateral pedal edema. Bilateral air entry equal and normal; No organomegaly

Date	26/04/23	02/05/23	09/05/23	• **Lipid Profile (25/04/23)** Cholesterol-94 mg/dL TG- 106 mg/dL LDL 66 mg/dL HDL-11 mg/dL VLDL-21 mg/dL • **Triple viral screen**-Negative • **PT/PTI/INR/aPTT**-19 sec/63 %/1.59/72sec
Hb (g/dl)	14.8	13.9	12.7	
TLC	26400	11900	15360	
DLC (N/L/M/E)	90/5.2/4.4/1	84/5.5/9.5/0.7	90/4/0/0.2	
Platelets (10^3/ µL)	175	195	170	
Na+/K+ (mEq/l)	128/4.5	130/5.1	121/4.6	
Urea/S.Cr. (mg/dl)	72/1.3	32/1.0	115/2.1	
Bilirubin T/C (mg%)	3.0/1.9	2.2/1.1	2.6/0.4	
S. Protein T / A (g/dl)	**7.4/3.3**	7.4/3.4	6.9/3.2	
ALT/AST/ALP (U/l)	68/166/**71**	57/48/48	71/31/48	
Ca+(mg/dl)	9.7	7.8	8.3	
Mg (mg/dl)	2.4		2.9	
PO4+		2.7	5.9	
CRP (mg/L)	90	22		

- **ECG:** (1) 16/04/23-polymorphic Ventricular tachycardia (2) 18/04/23- monomorphic VT (3) 25/04/23 biphasic p waves, QTc-460 msec (4) 12/05/23- Poor R wave progression.
- **Chest X-rays:** (1) 04/05/23- Cardiomegaly, B/L pleural effusion (RT>>LT); (2) 07/05/23-Cardiomegaly, B/L pleural effusion (RT>>LT); (1) 07/05/23- Cardiomegaly, B/L pleural effusion (RT>>>LT)
- **Echocardiogram:** LVD (ed)-57 mm; LVD (es)-50 mm; LA-44 mm, LV ejection fraction= 15-20%, moderate MR, moderate TR, Right ventricular dysfunction. RVSP=RAP+32 mmHg **Imp:** biventricular dysfunction

❖ At GMCH-32 he was managed with amiodarone, diuretics, B-blockers, digoxin, dapagliflozin, vericiguat initially and was planned for AICD implantation in view of ventricular tachycardia (VT). On day 5, he developed hypotension and was managed with inotropes and diuretics. On day 10 onwards there was decreased urine output and was given Inj. Lasix infusion and put on non-invasive ventilation for breathlessness.

Present Admission at PGIMER (Emergency/CCU) 11/05/23 to 13/05/23

Presenting Complaints

- **Breathlessness for 6 months**
  - Insidious onset, Gradually, progressing to NYHA class II and worsening to NYHA class III, orthopnoea (+)
- **Decreased urine output for 3 days**
  - Gradually progressive decline in urine output and anuria
  - Bilateral swelling of feet increased
  - Abdominal swelling (oedema)
  - No H/O fever
- **Personal/Family History:** No H/O DM or Hypertension, alcohol intake for 3 years, but no family history of similar illness.
- **Examination**-Drowsy, afebrile, PR 82/min feeble peripheral pulses, regular, BP 50/30 mm of Hg (on inotropes), RR 26/min, Spo2-not recordable. Pallor (-); Bilateral LL pitting edema, No clubbing, Right hand swelling and redness; No icterus/LAP/cyanosis.
  - **Respiratory**: Bilateral crepitations, Decreased breath sounds on right side, No bronchial breath sounds
  - **CVS**- S1/S2 normal, No added sounds, No murmur
  - **Abdomen**: edema (+), Soft; non-tender, no organomegaly, free fluid absent /bowel sounds+
  - **CNS**: E4V4M6(on admission), No focal neurological deficit

Investigations:

ABG/VBG	11/05/23	• BNP-5000
pH	7.39	
PaCO2 mmHg	27.14	
PaO2 mmHg	34.11	
O2 saturation	66.9%	
HCO^3 mmol/L	16.3	
Lactate mmol/L	-	

Date	11/05/23	12/05/23
Hb g/dl	11.6	
TLC	10800	
DLC (N/L/M/E)		
Platelets (10^3/ µL)	166	
Na+/K+ (mEq/L)	118/4.83	120.4/4.6
Urea/Creatinine (mg/dl)	112/2.46	121/3.09
Bilirubin T / C	5.07/3.02	5.28/4.28
AST/ALT/ALP	45/31/-	17.9/6.4/95
Ca+/ PO4+ /Mg^{++}(mg/dl)	-	8.99/7.90/3.0
Protein T / A(g/dl)	6.4/3.67	6.59/3.53
LDH units/L	-	293
CRP mg/L	-	27.13
Uric acid mg/dL	-	12.5

- **ECG- (1) 11/05/23 low voltage complexes, poor R wave progression. (2) 12/05/23 Low voltage complexes, QRS 160 msec, Poor R wave progression**
- **Pleural fluid analysis:** TLC-325/mm^3 (N/L-43.3/56.7)
- **USG whole abdomen (11/05/23)**-Live size-14.4 mm, mildly coarse, hepatic veins prominent. Right gross pleural effusion -10cm and left effusion-2 cm; IVC-16 mm; mild ascites.
- **USG KUB (11/05/23)**- Kidney sizes: RK =9.0 cm, LK-9.2 cm, bilateral normal echogenicity.
- **Upper limb compression doppler (12/05/23)**- marked edema forearm. Echogenic content seen in cephalic vein s/o thrombosis. Thrombophlebitis.

Course and management:

This 37-year-old male, presented with breathlessness of NYHA class II for 6 months and worsening of the same to NYHA class III for 2 weeks. There was swelling of feet for 6 months which was gradually progressing and no decreased urine output initially. There was history suggestive of ventricular tachycardia for which DC cardioversion was performed. There was one episode of fever 2 days prior to admission. On evaluation he had pitting pedal oedema, low voltage complexes on electrocardiogram and CXR showed B/L pleural effusion (Rt>Lt). He was managed in the lines of acute decompensated heart failure with diuretics; along with amiodarone (for VT) and antibiotics (Piperacillin &tazobactam). Hyponatremia was treated with tablet tolvaptan but persisted. Intravenous albumin administered for correction of hypoalbuminemia. Planned for AICD (Automatic Implantable Cardioverter Defibrillator) implantation but was deferred due to worsening heart failure symptoms and increasing pleural effusions. He developed hypotension (on 5^{th} day) for which inotropes were initiated only to be escalated further. There was progressive decline in urine output form 10^{th} day for which Lasix infusion given. In view of worsening HF symptoms and decreased urine output he was referred to PGIMER emergency. At admission in EMOPD he was hypoxic and had hypotension for which oxygen supplementation given and triple inotropes doses were hiked up. BNP levels were elevated, hyponatremia persisted and persistent rise in serum creatinine levels. There was evidence of bilateral pleural effusions on USG and had normal kidney size. There was thrombophlebitis of right upper limb with possible cephalic vein thrombosis. He was shifted to CCU for further management, wherein inotropes escalated and oxygen by mask ventilation administered. In view of anuria, dialysis was planned but could not be undertaken due to persistent hypotension. After 8 hours into CCU at 3.35 am on 13.05.23 he had cardiac arrest for which CPR was initiated as per standard ACLS guidelines. He was intubated put on mechanical ventilation and maximum doses of inotropes given. Despite extensive and best efforts of CPR, patient couldn't be revived and was declared dead on at 4.16 AM.

Unit's Final Diagnosis: Dilated Cardiomyopathy, severe ventricular dysfunction (EF=15-20%), refractory cardiogenic shock, refractory ventricular tachycardia, acute decompensated heart failure, Multiorgan dysfunction (acute kidney and liver injury), right hand thrombophlebitis.