DEATH BED TO BIRTHDAY CELEBRATION

PRESENTOR: DR.MUMMAKA HARSHA VARDHAN
DM- FIRST YEAR RESIDENT
CRITICAL CARE MEDICINE

GUIDE
DR. KALPANA KELKAR (HOD,CCM)
DR. PRACHEE SATHE (PROFESSOR,)CCM

- A 45 year old male hailing from pune shifted from outside JCI accredited hospital to critical care medicine ICU (Dy Patil hospital) tracheostomised on mechanical ventilatory support for **palliative care**

- **Significant past medical and surgical history:**

➢ Right pulmonary embolism in 2008(ENDARTERECTOMY DONE)

➢ Pericardial effusion-sternotomy with **pericardiectomy** done in Dec2008 since then on warfarin (anticoagulant)

➢ k/c/o **Cortical Venous Sinus Thrombosis**- on warfarin (anticoagulant)

Course in prior hospital

- Patient was admitted in outside hospital with
- c/o **fall f/b headache**
- f/b tr**ansient loss of consciousness.**
- CT Brain - **Diffuse SAH** involving B/L temporal and left frontal lobes. **Small haemorrhagic contusion** involving left temporal lobe.
- 2D-ECHO – **Severe PAH (75), Dilated RA & RV** and **severe TR**
- INR-2.03,PT-23.2
- CTPA-dilated pulmonary artery— PAH
- Patient intubated i/v/o low GCS for airway protection

Continued 1.

- CT- showed bilateral intracranial hematoma.
- D3-Emergency **decompressive craniectomy and hematoma evacuation** was done
- D5-CT brain done – hyperdense intra-axial haemorrhage which seemed to increase in size
- D8- CT brain-- shows increase in ICH and increase in surrounding edema. At that time GCS- E2VTM3, on IPPV mode (FiO2-30%).

  1.NA infusion@0.05mcg/kg/min.

  2.Medications-Inj Ceftriaxone+ Inj ENOXAPARIN + Inj Lacosamide + Inj LEVETIRACETAM + Inj Mannitol .
- D10- Tracheostomy done.
- Urine c/s- Pseudomonas aeruginosa(MDR) – **Colistin** started

Continued 2..

- Cardiology reference done - started on AMBRISENTAN 5mg OD.
- D13- CT-- BRAIN done-s/o interval reduction in cerebral edema, mid-line shift and IVH.
- D19- Pt had AF - Inj Amiodarone infusion started
- D20 – 4 episodes VF-5 cycles CPR f/b defibrillation- reverted to sinus rhythm. Maintaing vitals on high ionotropic support (NA,Vasopressin Adrenaline).
- D22- TT C/S- pus cells >25/lpf. Inj Ceftazidime/Avibactam+inj Tigecycline + inj Polymyxin-B+ Tab. Fluconazole. CPAP trial given

Continued 3…

- D26 - pulmonologist referral done due to weaning failure. Tab ambrisentan and Acetylcysteine neb added.
- D27 - S.cr-1.5.antibiotics dose reduced by ID specialist. Nephro referral done. Tab sodium bicaronate added.
- D28- maintaining vitals off inotropes.
- D33 – CT brain done- no mid-line shift. surrounding cerebral edema in both temporal region reduced as compared to previous scan.
- 22/6/22- neurologically status quo. Tolerating CPAP(fio2-30%). Not obeying VC. Right spontaneous movements +
- HR-104bpm, BP- 125/92 mm hg,spo2-100%

- **FINAL DIAGNOSIS**:

- EXTENSIVE CORTICAL VENOUS SINUS THROMBOSIS WITH INTERMITTENT HEMATURIA

- DECOMPRESSIVE CRANIECTOMY ON 21/5/22.

- CHRONIC PULMONARY HTN WITH DILATED RIGHT ATRIUM & RIGHT VENTRICLE

- UROSEPSIS

- General Examination on Admission:
- PR- 91/min
- BP-110/75mmhg
- SPO2-100%
- RR-33/min
- AFEBRILE
- CNS : CONSCIOUS, IRRITABLE
- E3VTM2
- CVS : S1S2 PRESENT
- RS : AE REDUCED AT LEFT SIDE
- P/A : SOFT, NON TENDER

- All baseline investigations – within normal limits

- SOFA score:
  - On admission:7
  - After 24 hours: 7

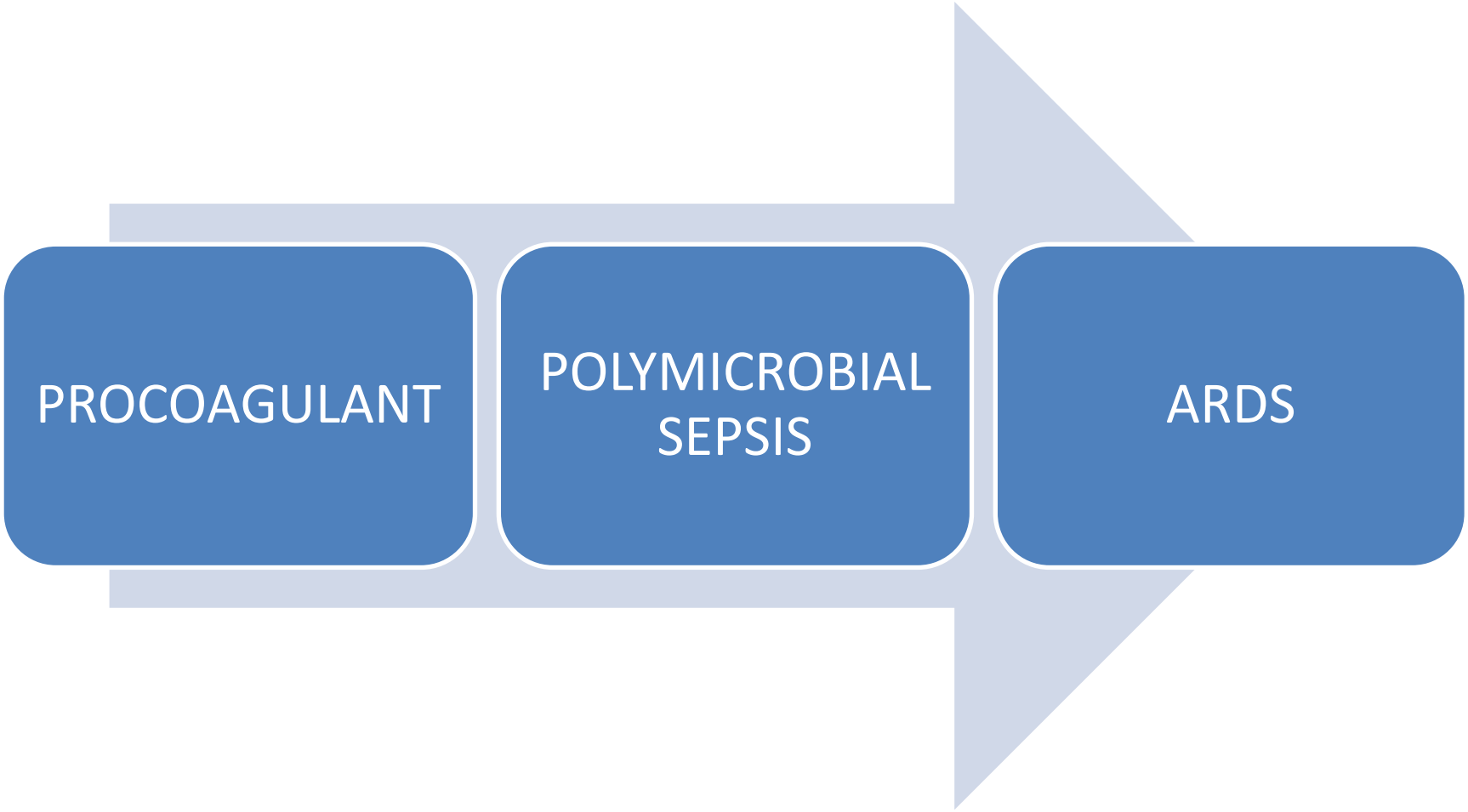
Predicted mortality - 33%

- APACHE 2 score:
  - On admission: 21
  - After 48 hours: 21

- Patient shifted to DyPatil hospital on 25/6/22 from outside hospital at 1am.

- Pt was tracheostomized ,conscious not obeying commands with left side hemiplegia on MV SUPPORT with VC mode on Fio2 60% .(minimal secretions+,TT-day 28,RT-insitu,Foleys D3)

CHALLENGES



PROCOAGULANT

- Initially treated with LMWH – Enoxaparin
- Later with NOAC’S - RIVORAXABAN

ANTI- PAH RX

- T.AMBRISENTAN
- T.SILDENAFIL
- T.RIOCIGUAT

ANTI-EPELEPTIC RX

- Inj.Levetiracetam
- Inj.lacosamide

POLYMICROBIAL SEPSIS (MDR)

- DyD1-TT c/s- Chrysobacterium indologenes – sensitive to piperacillin
- DyD2- Urine c/s – Candida glabrata – Inj. Voriconazole 200 mg BD.
- DyD3 - TT(trap) – Burkolderia cepacia isolated - Inj Minocycline 100mg IV BD started .
- DyD12- TT c/s- Klebsiella pneumonia isolated.(inj Meropenem 1g tds started)
- DyD15- TT c/s- Pseudomonas aeruginosa (inj meropenem continued)

VIKAS SALUNKE

REPORT

Tel No: 919881191726
PID: 36012417
REPORT PRN: PRN-1-00903825 IPOP:IPD-1-22-03985
Age:45.00 Years Sex:MALE

Ref.:Dr.CCM TEAM
Sample Collected At:
CCM
Dr. D. Y. Patil Medical College,
Hospital & Research Centre,
Sant Tukaram Nagar, Pimpri Colony, Pune,

SID: 322806550
Collection Date:
28-06-2022 03:10 PM
Registration Date:
28-06-2022 03:10 pm
Report Date:
02-07-2022 05:11 PM

Blood Culture Report

Test : Isolation & Antimicrobial susceptibility of aerobic organisms.

Method : Manual culture / ID & AST by Vitek 2 Automated System.

Specimen : Tracheal secretions.

ZN Stain : No acid fast bacilli seen.

Organism : Burkholderia cepacia Colony count more than 1,00,000 CFU/ml.

Antimicrobial susceptibility	MIC (µg/ml)	Interpretation
Cefoperazone/sulbactam	16	Susceptible
Ceftazidime	2	Susceptible
Ciprofloxacin	>=4	Resistant
Co-Trimoxazole	<=20	Susceptible
Levofloxacin	4	Intermediate
Meropenem	2	Susceptible
Minocycline	8	Intermediate

Comment : (Gram stain-gram negative bacilli seen)

<End>

TT SECRETIONS – BURKHOLDERIA CEPACIA

End of Report

DR.NIKUNJA KUMAR DAS
MBBS, M.D.(MICROBIOLOGY)
REG.NO.-16392/2007(ODISHA)
DPU

DR.D Y PATIL MEDICAL COLL...

bioMérieux Customer:

DR. D Y PMCHRC , PUNE
Microbiology Chart Report

Printed July 11, 2022 10:05:55 AM IST

Patient Name: SALUNKE, VIKAS
Location: CCM
Lab ID: VGN 566/22

Patient ID: 90382500
Physician:
Isolate Number: 1

Organism Quantity:
Selected Organism : Klebsiella pneumoniae
BP Infection Site:

Source: TT SECRETION

F-1502

Collected: Jul 9, 2022

Comments:	Fosfomycin results are valid only for Urinary isolates of E. coli

Susceptibility Information	**Analysis Time:** 14.58 hours	**Status:** Final

Antimicrobial	MIC	Interpretation	Antimicrobial	MIC	Interpretation
Piperacillin/Tazobactam	>= 128	R	Gentamicin	<= 1	S
Ceftazidime	>= 64	R	Ciprofloxacin	0.12	S
Cefoperazone/Sulbactam	>= 64	R	Levofloxacin	0.25	S
Cefepime	>= 32	R	Minocycline	8	I
Aztreonam	>= 64	R	Tigecycline	>= 8	R
Imipenem	2	I	Fosfomycin	<= 16	S
Meropenem	0.5	S	Colistin	2	I
Amikacin	2	S	Trimethoprim/ Sulfamethoxazole	80	R

AES Findings	
Confidence:	Consistent

- Carbapenemase Producer.

KLEBSIELLA PNEUMONIAE

Dr. Shahzad Mirza
Associate Professor, HICO
Dept. of Microbiology
DYPMC, Pimpri, Pune- 18.

Sputum/ Body Fluid/ CSF/ Pus/ Urine
Direct Microscopic Examination

Gram Stain : gram negative bacilli seen.

Z-N Stain : AFB seen ~~-~~ acid-fast bacilli seen.

Pus Cells : plenty /hpf

Epi. Cells : occasional /hpf

Culture/ Sensitivity

F-1538

Organism Grown : Pseudomonas aeruginosa isolated.
(cfu ≥ 10^5/ml)

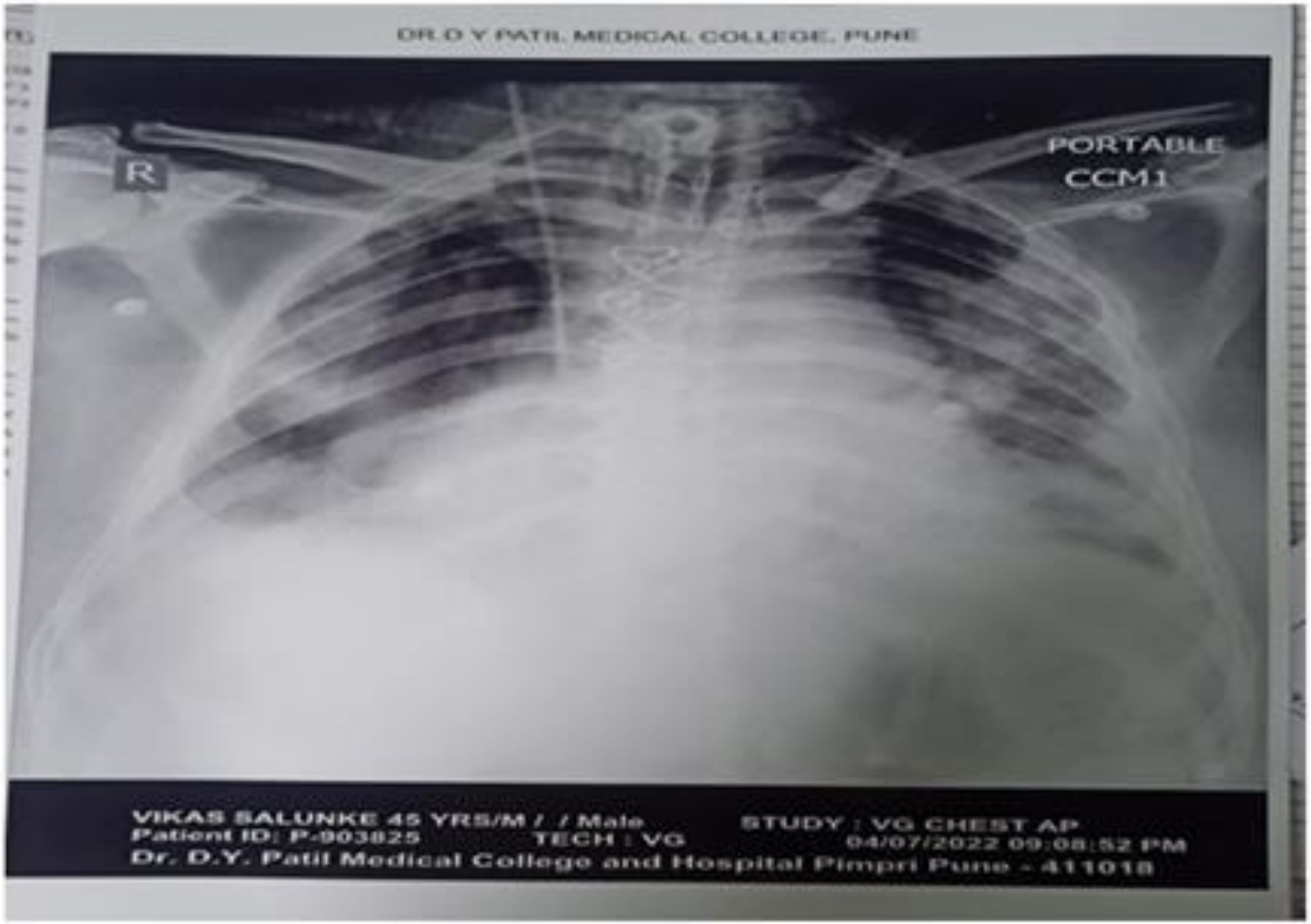
ANTIBIOTICS	RESULT	ANTIBIOTICS	RESULT
AMPICILLIN	—	CEFTAZIDIME+CLAVULANIC ACID	S
NORFLOXACIN	—	CEFTAZIDIME+TAZOBACTUM	S.
AMIKACIN	S	PIPERACILLIN+TAZOBACTUM	S
GENTAMICIN	S.	MEROPENEM	S.
CEFOXITIN	—	NALIDIXIC ACID	—
CEFOTAXIME	—	NITROFURANTOIN	—.
CEFTAZIDIME	S		
COTRIMAXAZOLE	—	COLISTIN	—
CHLORAMPHENICOL	—.	FOSFOMYCIN	—
cefepime	S	TIGECYCLIN	—.
CARBENICILLIN	S	OFLOXACIN	—
PIPERACILLIN	S	TOBRAMYCIN	S.
CIPROFLOXACIN	S		

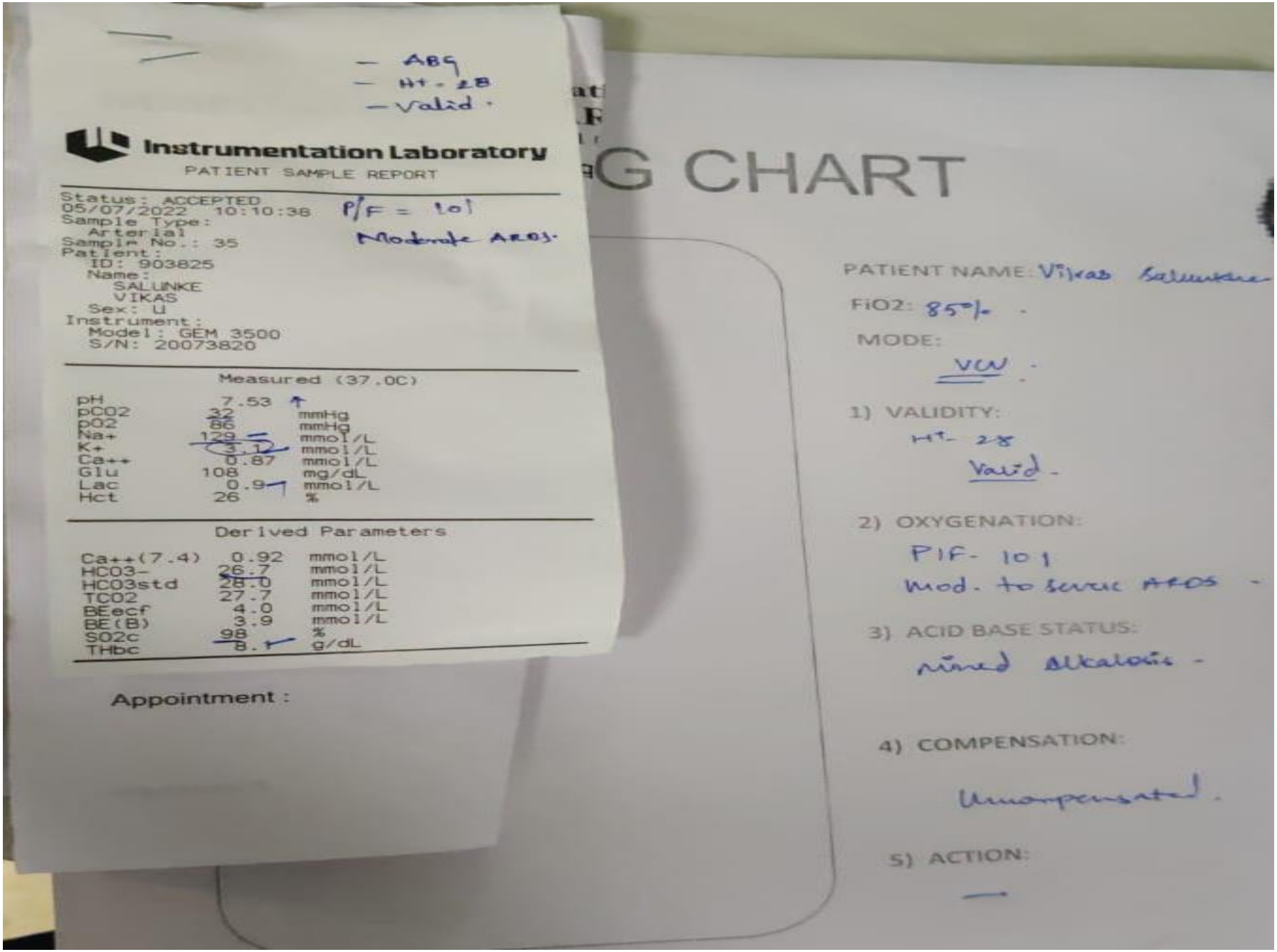
NOTE: P. aeruginosa is intrinsically resistant to. Ampicillin, Amoxyclav, Tigecycline cefotaxime, ceftriaxone, cotrimaxazole, chloramphenicol.

Dr. Shahzad Mirza
Associate Professor, HICO
Dept of Microbiology
DYPMC, Pimpri, Pune-18.

☆ Acid fast Bacilli seen on ZN stain further identification is being carried out will confirm ~~MTB~~ MTB or MOT.

- shock treated with Inj NA @ 0.05 mcg/kg/min. (as per SURVIVING SEPSIS guidelines)


DR. D Y PATIL MEDICAL COLLEGE, PUNE
R
PORTABLE
CCM1
VIKAS SALUNKE 45 YRS/M / / Male
Patient ID: P-903825
TECH : VG
STUDY : VG CHEST AP
04/07/2022 09:08:52 PM
Dr. D.Y. Patil Medical College and Hospital Pimpri Pune - 411018



— ABG
— Ht - 28
— Valid.

Instrumentation Laboratory

PATIENT SAMPLE REPORT

Status: ACCEPTED
05/07/2022 10:10:38
Sample Type:
Arterial
Sample No.: 35
Patient:
ID: 903825
Name:
SALUNKE
VIKAS
Sex: U
Instrument:
Model: GEM 3500
S/N: 20073820

P/F = 101
Moderate ARDS.

Measured (37.0C)

pH	7.53 ↑	
pCO2	32	mmHg
pO2	86	mmHg
Na+	129	mmol/L
K+	3.1	mmol/L
Ca++	0.87	mmol/L
Glu	108	mg/dL
Lac	0.9	mmol/L
Hct	26	%

Derived Parameters

Ca++(7.4)	0.92	mmol/L
HCO3-	26.7	mmol/L
HCO3std	28.0	mmol/L
TCO2	27.7	mmol/L
BEecf	4.0	mmol/L
BE(B)	3.9	mmol/L
SO2c	98	%
THbc	8.1	g/dL

Appointment :

G CHART

PATIENT NAME: Vikas Salunke

FiO2: 85%.

MODE:

VCV.

1) VALIDITY:

Ht- 28

Valid.

2) OXYGENATION:

P/F- 101

Mod. to Severe ARDS.

3) ACID BASE STATUS:

Mixed Alkalosis.

4) COMPENSATION:

Uncompensated.

5) ACTION:

—

Berlin Definition of ARDS (2011- 2012)

1. Timing	1 wk of known clinical insult OR New worsening of respiratory symptoms		
2. Chest Imaging	Bilateral opacities not explained by effusions, collapse, nodules		
3. Origin of Edema	Respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (eg, echocardiography) to exclude hydrostatic edema if no risk factor present LVF and ARDS can coexist No need for SG		
4. Oxygenation	**Mild** P/F ratio 300 -200 CPAP / PEEP ≥ 5 cm	**Moderate** P/F ratio 200-100 PEEP ≥ 5 cm	**Severe** P/F ratio <100 PEEP ≥ 5 cm
Expected days of MV	5 (2-11)	7(4-14)	9(5-17)
Expected Mortality	27%	32%	45%

- DyD10- Due to worsening CXR (B/L lower lobe and mid-zone consolidatory changes), P/F ratio = 101 (ABG showing mixed alkalosis) and pt had respiratory distress (asynchrony with ventilator) ARDS net protocol initiated and pt is sedated with inj Fentanyl and paralysed with inj Vecuronium and lateral position given.

- Plateau pressures were maintained below 30 cm H2O.

- Sedation holiday and spontaneous trials were given at regular intervals

- Chest physiotherapy initiated.

RESEARCH Open Access

Sequential lateral positioning as a new lung recruitment maneuver: an exploratory study in early mechanically ventilated Covid-19 ARDS patients

Rollin Roldán[1,2,3], Shalim Rodriguez[1,2], Fernando Barriga[1,2], Mauro Tucci[3], Marcus Victor[3,4], Glasiele Alcala[3], Renán Villamonte[1,2], Fernando Suárez-Sipmann[5,6,7], Marcelo Amato[3], Laurent Brochard[8,9*] and Gerardo Tusman[10]

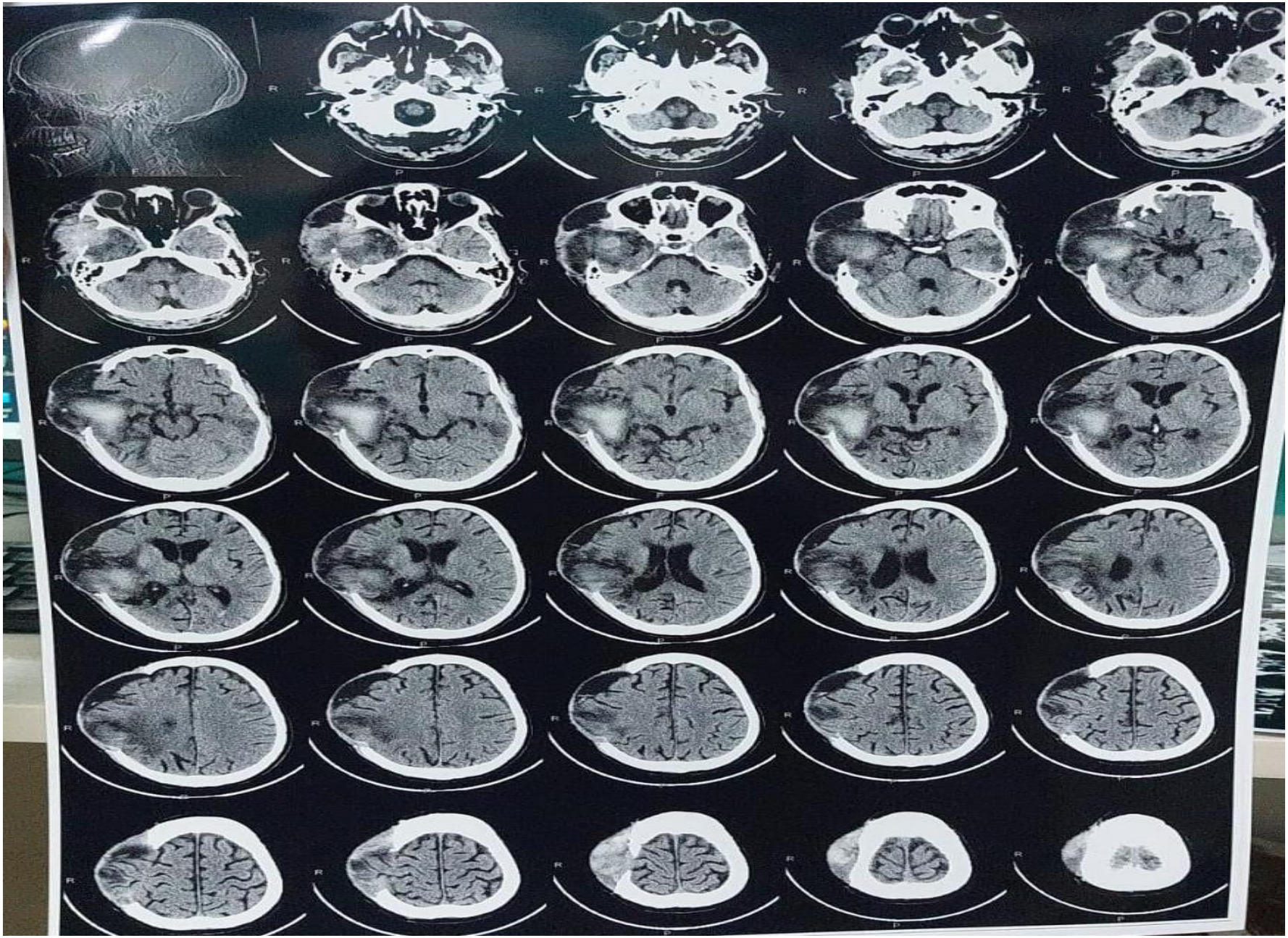
NUTRITION

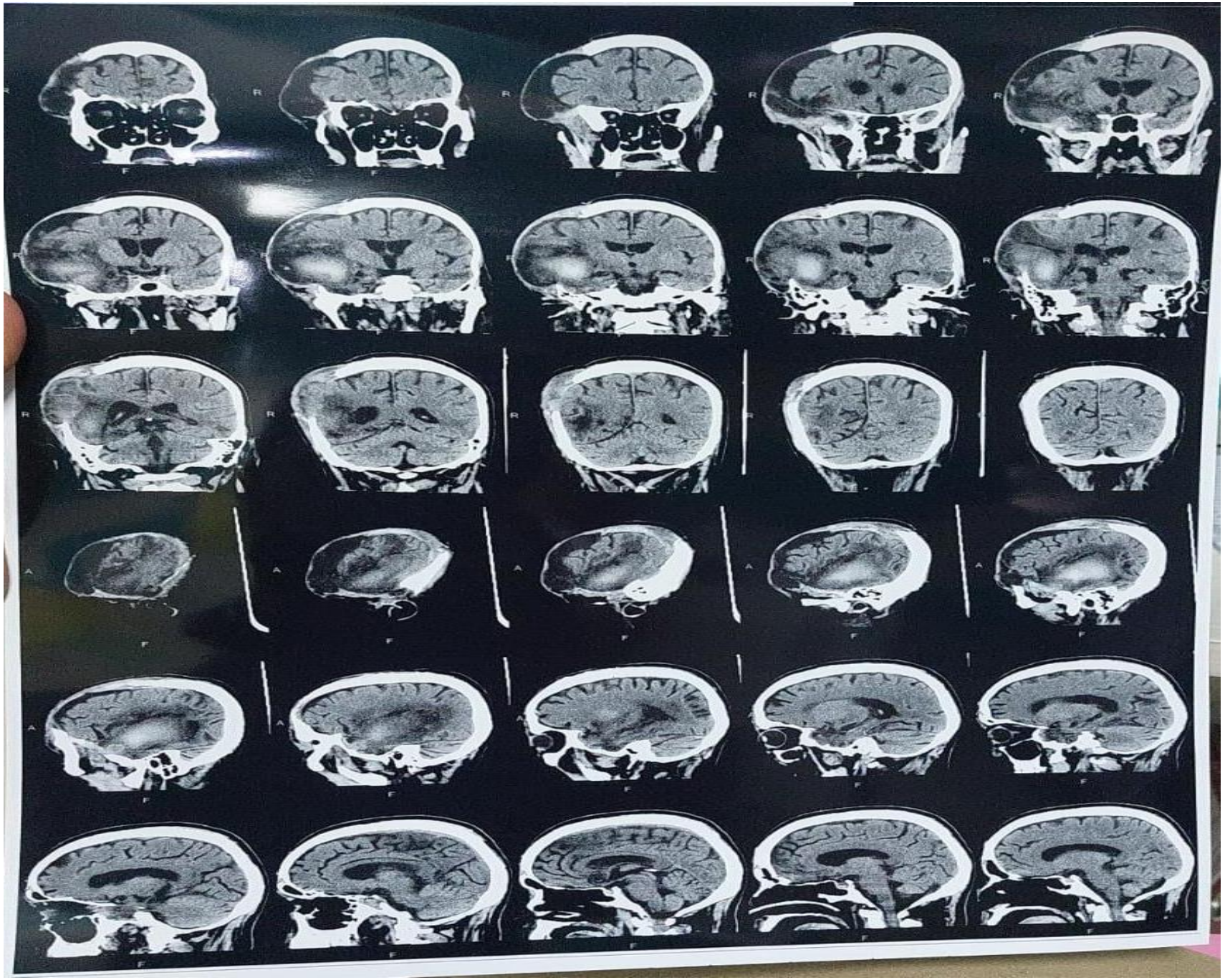
- Enteral nutrition is the preferred method of providing nutritional support to critically ill patients
- Critically ill patients undergo many physiological changes that results in impaired GI motility, digestion, or absorption. Such GI dysfunction, often coupled with inadequate caloric intake, leads to development of an energy deficit and lose lean body mass.
- Early RT feeds were initiated calculating the caloric and protein requirements of the patient

- Nutrition : 1800 kcal/ day, protein – 90 g/ day

International guidelines on nutrition in critically ill patients

Guideline	Energy requirements	Protein requirements	Commencement of EN
ASPEN/SCCM (2016)	25–30 kcal/kg/day Obesity: BMI 30–50 = 11–14 kcal/kg ABW/day BMI > 50 = 22–25 kcal/kg IBW/day	1.2–2 g/kg/day Obesity: BMI 30–40 = 2.0 g/kg IBW/ day BMI ≥ 40 = up to 2.5 g/kg IBW/day	Early EN (24–48 h)
Canadian Clinical Practice Guidelines (2015)	Nil	Nil	Early EN (within 24–48 h)
ESICM clinical practice guidelines (2017)	Nil	Nil	Early EN should be prescribed
ESPEN (2019)	Obesity: 20–25 kcal/kg ABW/day	1.3 g/kg/day Obesity: 1.3 g/kg ABW/day	Early EN (within 48 h)





- CT BRAIN -s/o craniectomy defect in right fronto-parieto-temporal bone with a crescent shaped hypodense area of CSF density along right fronto parietal lobe convexity s/o **subdural hygroma** with mild dilatation of lateral ventricle.

- Patient neurologically improved (GCS- E4VTM5).

OTHER EVENTS:

- DyD21- B/L U/L Arterial and Venous Doppler was done- s/o Bilateral subcutaneous edema with normal bilateral arterial and venous Doppler ruling out Cellulitis and DVT

- DyD26 - HRCT Thorax was done - s/o B/L Pleural effusion (L>R) with major fissural extension on both sides

- DyD37 – Decannulation done and pt kept on O2 mask @6l/min

- DyD40 - Patient shifted to ward where treatment with CCM team continued.

- DyD52 -Patient having fever with 101*f , INJ.PIPERACILLIN+TAZOBACTAM added.

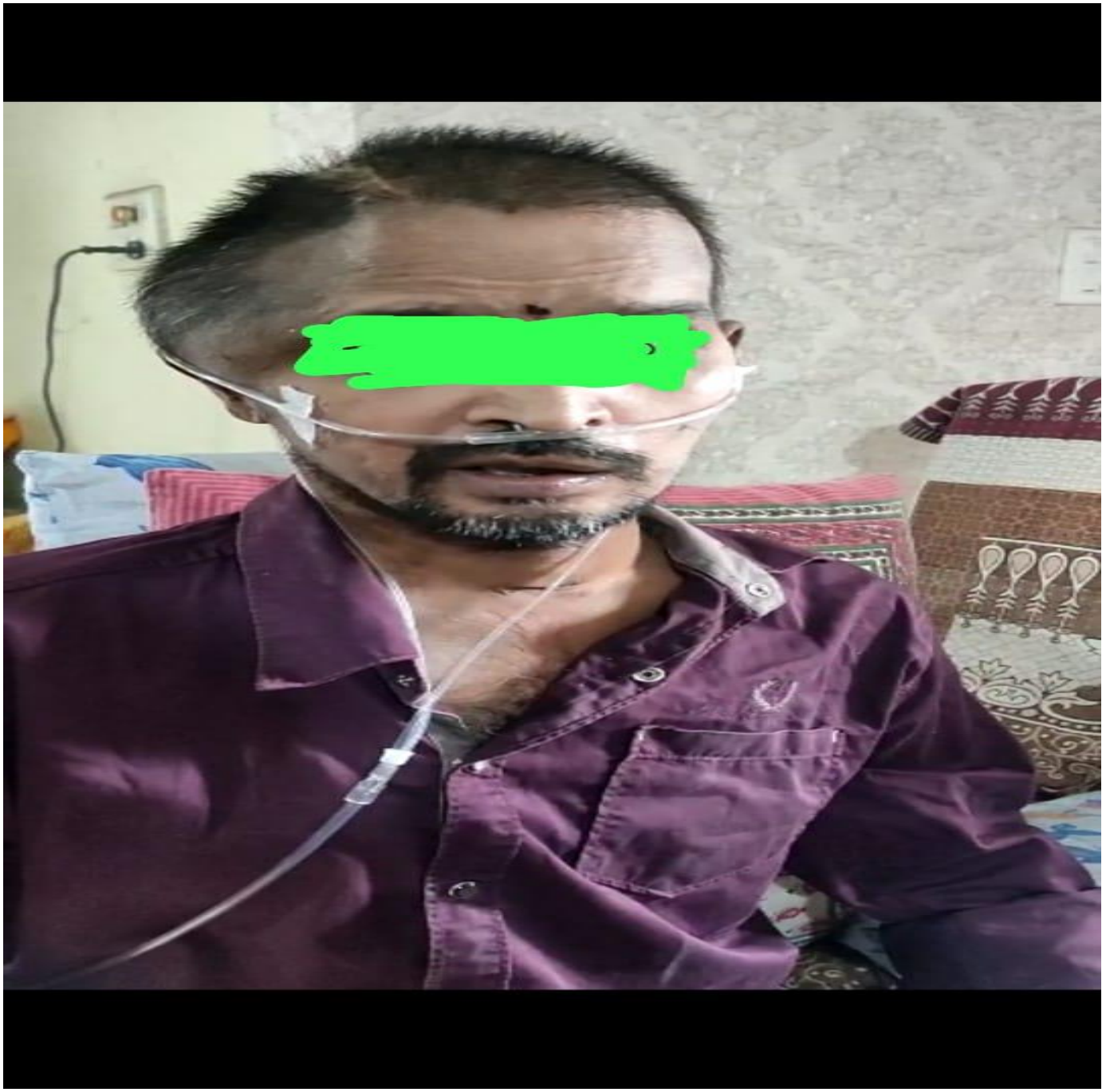
- DyD55 -Fever not settled . Escalated antibiotic to INJ.CEFTAZIDIME/AVIBACTAM AND AZTREONAM

- Stay in ICU : 40 days
- Stay in WARD:25 days
- Days on MV support:37 days

Treatment during Hospitalisation

- INJ.LEVETIRACETAM 1 GM BD
- INJ.LACOSAMIDE 200 MG BD
- INJ.MINOCYCLINE 100 MG BD
- INJ.AZTREONAM 1 GM TDS
- INJ.CEFTAZIDIME/AVIBACTAM 2.5 GM TDS
- INJ.MEROPENEM 500 MG BD
- INJ.PIPERACILLIN+ TAZOBACTAM 4.5GM TDS
- INJ.N–ACETYL CYSTEINE 600 MG BD
- INJ.ENOXAPARIN 0.6 CC BD
- INJ.PANTOPRAZOLE 40 MG OD
- TAB.VORICONAZOLE 200 MG BD
- TAB.AMIODARONE 100 MG BD

- TAB.RIOCIGUAT 1 MG BD
- TAB.AMBRISETAN 5 MG OD
- TAB.TORSEMIDE 5MG OD
- TAB.RIVAROXABAN 15 MG BD
- TAB.SPIRINOLACTONE/FUROSEMIDE 50/20 OD
- TAB.MODAFINIL 100 MG OD
- TAB.ATORVASTATIN 40 MG OD
- SYP.MUCAINE GEL BD
- SYP.DEXORANGE BD
- NEB WITH FORACORT BD
- NEB WITH MUCOMIX TDS
- NEB WITH DUOLIN BD
- SLURGEN OINTMENT OD
- HYDROHEAL CREAM LA
- FUNGIGRIS - AM CREAM LA
- MOISOL E/D QID



WhatsApp Video 2022-10-12 at 11.31.07.mp4

Team work

- CCM TEAM
- CARDIOLOGY
- NEUROLOGY
- PULMONOLOGY
- MICROBIOLOGY
- NURSING STAFF
- PHYSIOTHERAPY
- RESPIRTORY THERAPIST
- RELATIVES
- PSYCHOLOGICAL SUPPORT