



NEWSLETTER FEBRUARY 2024

# MEDI UPDATES

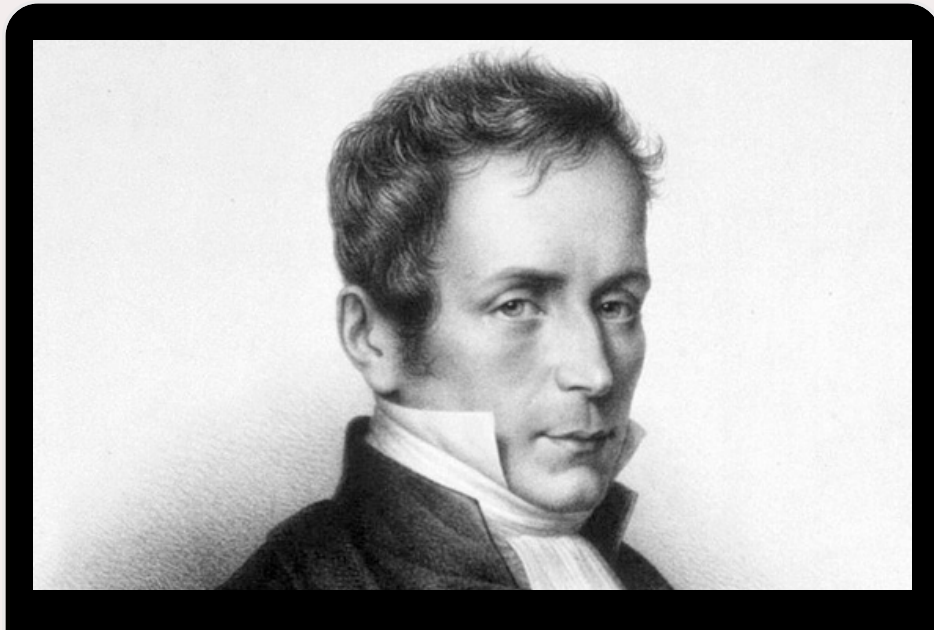


आदौ राम तपोवनादि गमनं, हत्वा मृगं कांचनम्।  
वैदीहीहरणं जटायुमरणं, सुग्रीवसंभाषणम्॥  
बालीनिर्दलनं समुद्रतरणं, लंकापुरीदाहनम्।  
पश्चाद् रावण कुम्भकर्ण हननम्, एतद्धि रामायणम्॥  
- Ramayana



**NEUROSURGERY & NEUROLOGY**  
**CARDIOLOGY**  
**NEPHROLOGY & UROLOGY**  
**CRITICAL CARE & PULMONOLOGY**  
**LAP SURGERY & PLASTIC SURGERY**  
**MEDICINE & PAEDIATRIC (NEONATOLOGY)**  
**ORTHOPEDIC & JOINT REPLACEMENT**  
**ANESTHESIA & EMERGENCY MEDICINE**  
**RADIOLOGY & INTERVENTIONAL**  
**RADIOLOGY**  
**PATHOLOGY & DIAGNOSTICS**  
**GASTROENTEROLOGY**  
**ENT, PSYCHIATRY & ALLIED SPECIALITIES**

**THE FLAT, CIRCULAR DIAPHRAGM IS IDEAL FOR HIGH-FREQUENCY SOUNDS, SUCH AS HEART MURMURS AND RESPIRATION SOUNDS, WHEREAS THE CUP-SHAPED BELL IS IDEAL FOR LOW-FREQUENCY SOUNDS, SUCH AS HEART SOUNDS.**



**RENE  
LAENNEC**

**Rene Theophile Hyacinthe Laënnec (1781-1826) was a French physician who, in 1816, invented the stethoscope. Using this new instrument, he investigated the sounds made by the heart and lungs and determined that his diagnoses were supported by the observations made during autopsies.**

Primum non nocere vaguely translates to 'do no harm'. The clinical scenario where treatment/intervention by doctor leading to unexpected worsening of disability is encountered in day-to day practice. Tuberculosis-IRIS is one such scenario where treatment of tuberculosis with AKT in with/without Retroviral infections may lead to worsening of clinical and/or MRI features.

**Case:**

A 40 year old male had been suffering from fever, dry cough, weight loss since 3 months , headache since last 15 days. Initial evaluation showed miliary pattern on chest X ray and MRI brain was essentially normal. Sputum examination was not possible for want of specimen.CSF analysis showed pleomorphic lymphocytosis, with raised proteins and ADA levels. CSF TB GeneXpert was positive for Tuberculosis with no resistance to Rifampicine. Tests for Retrovirus was negative. He was started on AKT with tapering dose of steroids over 6 weeks. He then developed bilateral Diminution of vision, behavioral changes in form of forgetfulness, confusion. Repeat MRI brain showed new Ring enhancing lesion in frontal and temporal lesion, bilateral infarct in basal Ganglia. Repeat CSF analysis showed increase in WBC count and proteins, CSF cryptococcus and toxoplasma were negative. He was restarted on steroids with no further worsening of clinical features.

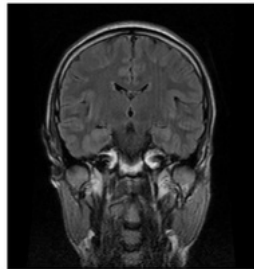
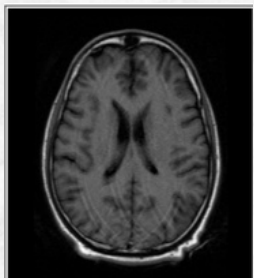
Tuberculosis-immune reconstitution inflammatory syndrome(IRIS) is an excessive immune response against Mycobacterium tuberculosis that may occur in either HIV-infected or uninfected patients, during or after completion of anti-TB therapy. In HIV-infected patients it occurs after initiation of antiretroviral therapy independently from an effective suppression of HIV viremia. There are two forms of IRIS: paradoxical or unmasking. Paradoxical IRIS is characterized by recurrent, new, or worsening symptoms of a treated case. Unmasking IRIS is an antiretroviral-associated inflammatory manifestation of a subclinical infection with a hastened presentation.

The following criteria must be applied to diagnose TB-IRIS

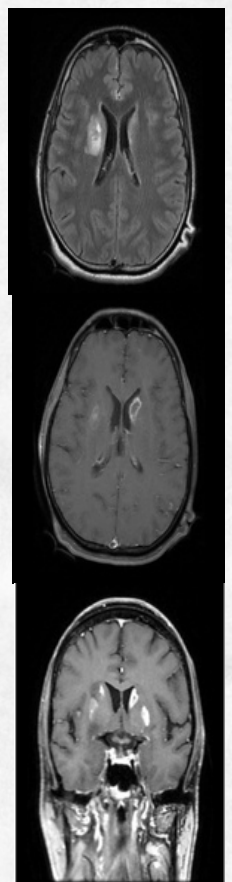
- (1)initial improvement of TB-related symptoms and/or radiographic findings after adequate anti-TB treatment for a certain time;
- (2)paradoxical deterioration of TB-related symptoms and/or radiologic findings at the primary or at new locations during or after anti-TB treatment;
- (3)absence of conditions that reduce the efficacy of anti-TB drugs (e.g., poor compliance, drug malabsorption, drugs side effects);
- (4)exclusion of other possible causes of clinical deterioration.

A prospective study recently showed a correlation between positive sputum culture (indicating high antigenic load) and inflammatory monocyte activation markers (strongly predictive of development of paradoxical TB-IRIS), suggesting that high antigen loads and inflammation may act together in the pathogenesis. However, host inflammatory responses (with the release of proinflammatory cytokines) may be stronger determinants of IRIS pathogenesis than mycobacterial factors.

There is no consensus yet on the standard treatment of TB-IRIS, but corticosteroids are first-line therapy (prednisone 1.5 mg/kg/day tapered over four weeks) .Nonsteroidal anti-inflammatory drugs (NSAIDS) have been used for symptomatic management of mild or localized TB-IRIS. Biologic and traditional immunomodulators including thalidomide, TNF-a inhibitors, IL-6 blockers, montelukast, and pentoxifylline have been used for treatment of refractory TB-IRIS in case reports. Studies have shows variable results in outcome ranging to 0 to 35% mortality.



Initial MRI  
Normal

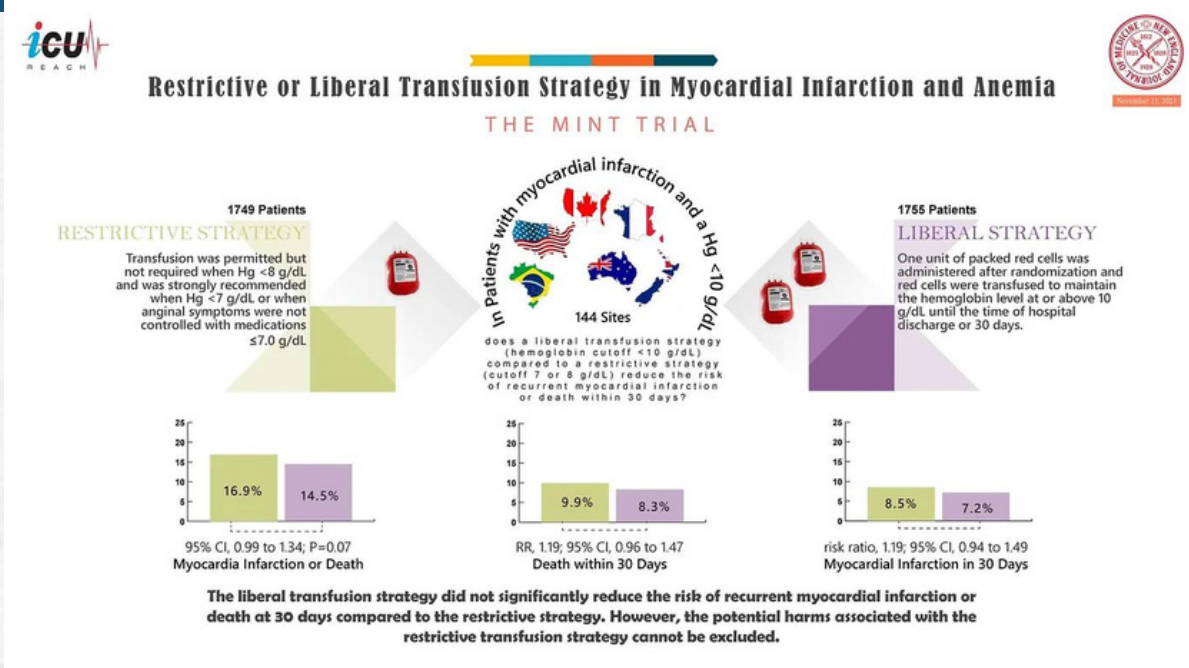


Multiple  
Ring enhancing  
lesions



Case Presented by  
Dr Gaurav Shah,  
Neurophysician  
Divine Life Hospital  
Adipur

Dr Gaurav Shah is well known  
Neurophysician with special  
interest in Neuro Critical Care.



**PICO Framework:**

- Population: Patients with myocardial infarction and a hemoglobin level of less than 10 g per deciliter.
- Intervention: Liberal transfusion strategy (hemoglobin cutoff for transfusion <10 g per deciliter).
- Comparison: Restrictive transfusion strategy (hemoglobin cutoff for transfusion 7 or 8 g per deciliter).
- Outcome: Primary outcome was a composite of myocardial infarction or death at 30 days.

**Methods:**

- Design: Phase 3, interventional, randomized controlled trial.
- Participants: 3504 patients with myocardial infarction and hemoglobin levels <10 g/dL.

**Results:**

- Transfusion: Average number of red-cell units transfused was 0.7±1.6 in the restrictive group and 2.5±2.3 in the liberal group.
- Hemoglobin Levels: The mean hemoglobin level was 1.3 to 1.6 g/dL lower in the restrictive group than in the liberal group on days 1 to 3 after randomization.
- Primary Outcome: Occurred in 16.9% of patients in the restrictive group and 14.5% in the liberal group (risk ratio 1.15; 95% CI, 0.99 to 1.34; P=0.07).
- Mortality: 9.9% in the restrictive group and 8.3% in the liberal group (risk ratio, 1.19; 95% CI, 0.96 to 1.47).
- Myocardial Infarction: Occurred in 8.5% of the restrictive group and 7.2% of the liberal group (risk ratio, 1.19; 95% CI, 0.94 to 1.49).

**Conclusions:**

- The liberal transfusion strategy did not significantly reduce the risk of recurrent myocardial infarction or death at 30 days compared to the restrictive strategy.
- However, the potential harms associated with the restrictive transfusion strategy cannot be excluded.

**Implications for Intensivists:**

- This study suggests that a liberal transfusion strategy in acute myocardial infarction patients with anemia does not confer a significant advantage in reducing the risk of myocardial infarction or death within 30 days.
- The marginally higher rates of adverse outcomes in the restrictive group, although not statistically significant, warrant careful consideration in clinical decision-making.
- Intensivists should weigh the risks and benefits of transfusion thresholds on an individual patient basis, taking into account other clinical factors. More inclined to keep Hg level above 8 in acute myocardial infarction and acute coronary syndrome



**Preventive Health Checkup Plans**  
**Personalised Health Check Ups**

**Contact**

**arpita.barve@divinelifeadipur.com**



## Book Troverts

The Silent Patient

Author: Alex Michaelides

***The Silent Patient* is a shocking psychological thriller of a woman's act of violence against her husband—and of the therapist obsessed with uncovering her motive.**

**Alicia Berenson's life is seemingly perfect. A famous painter married to an in-demand fashion photographer, she lives in a grand house with big windows overlooking a park in one of London's most desirable areas. One evening her husband Gabriel returns home late from a fashion shoot, and Alicia shoots him five times in the face, and then never speaks another word.**

**Alicia's refusal to talk, or give any kind of explanation, turns a domestic tragedy into something far grander, a mystery that captures the public imagination and casts Alicia into notoriety. The price of her art skyrockets, and she, the silent patient, is hidden away from the tabloids and spotlight at the Grove, a secure forensic unit in North London.**

**Theo Faber is a criminal psychotherapist who has waited a long time for the opportunity to work with Alicia. His determination to get her to talk and unravel the mystery of why she shot her husband takes him down a twisting path into his own motivations—a search for the truth that threatens to consume him....**

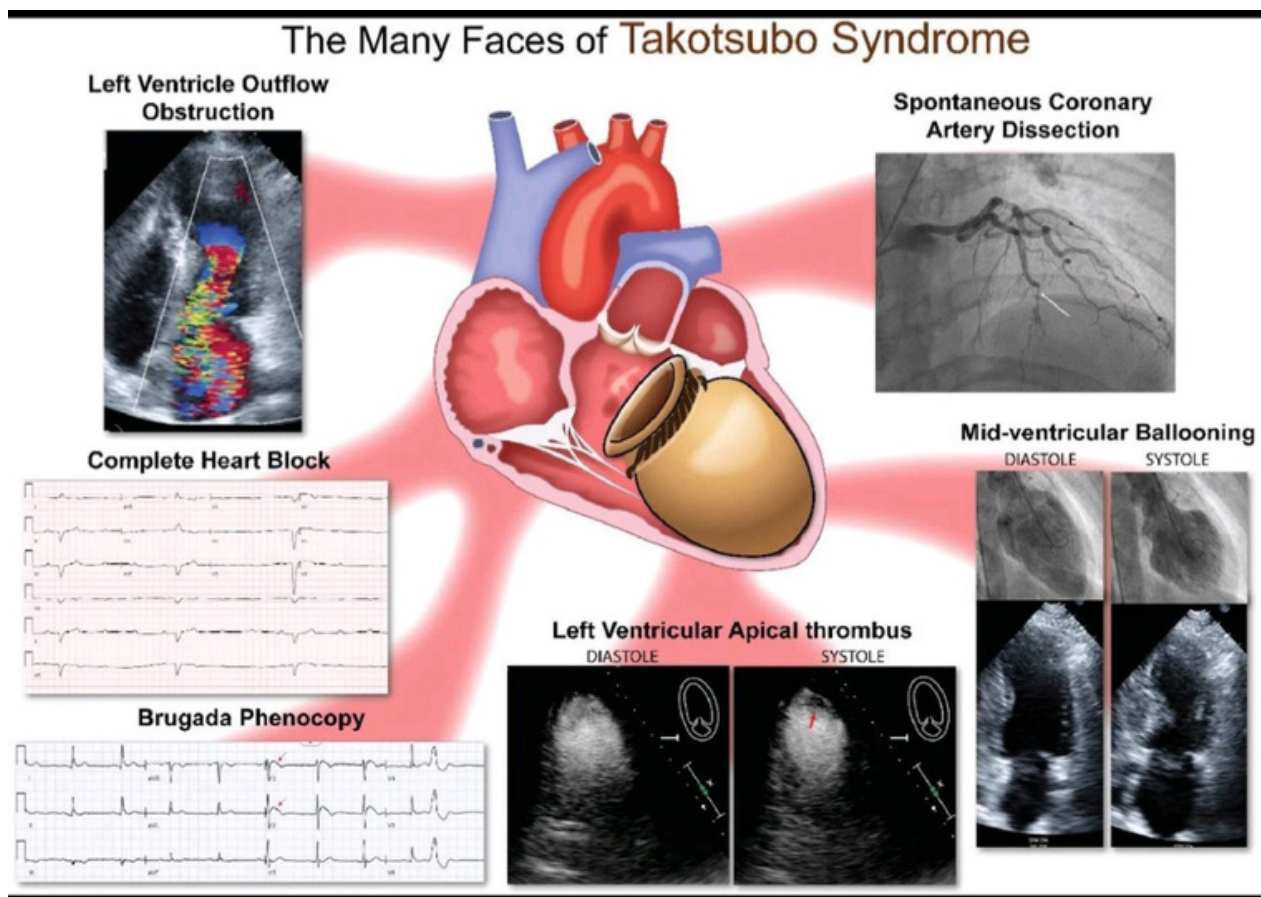
# Takotsubo Cardiomyopathy (Stress Cardiomyopathy)

Stress cardiomyopathy is a syndrome characterized by transient regional left (and often right) ventricular dysfunction in the absence of significant coronary artery disease.

In patients who present with a clinical picture consistent with ACS (such as ST-elevation myocardial infarction [MI], non-ST-elevation MI, or unstable angina), clinical suspicion of possible stress cardiomyopathy should not alter evaluation and management of these ACS conditions. The significant majority of these cases are due to occlusion of a coronary artery and revascularization therapy should not be delayed.

**Diagnosis** – Diagnostic criteria include presence of transient regional wall motion abnormalities (typically not in a single coronary distribution), absence of angiographic evidence of obstructive coronary disease or acute plaque rupture, presence of new electrocardiographic abnormalities or modest troponin elevation, **and** exclusion of pheochromocytoma or myocarditis.

Wall motion abnormalities in patients with stress cardiomyopathy are typically detected by echocardiography or left ventriculography. Patterns of left ventricular (LV) wall motion abnormality in patients with stress cardiomyopathy include the apical type (which occurs in the most cases), and atypical variants including midventricular, basal, focal (limited to an isolated segment), and global types.



# Start Smart, Then Focus

## An **Antibiotic** Care Bundle for Hospitals

### Day 1: Start Smart...

1. Start antibiotics only if there is clinical evidence of bacterial infection
  - If there is evidence of bacterial infection, prescribe in accordance with your local antibiotic guidelines and appropriately for the individual patient (see notes below)
2. Obtain appropriate cultures before starting antibiotics
3. Document in both the drug chart and medical notes:
  - Treatment indication
  - Drug name, dose, frequency and route
  - Treatment duration (or review date)
4. Ensure antibiotics are given within four hours of prescription
  - Within 1 hour for severe sepsis or neutropenic sepsis

When deciding on the most appropriate antibiotic(s) to prescribe, consider the following factors:

- History of drug allergy (document allergy type: minor (rash only) or major (anaphylaxis, angioedema))
- Recent culture results (e.g. is patient colonised with a multiple-resistant bacteria?)
- Recent antibiotic treatment
- Potential drug interactions
- Potential adverse effects (e.g. *C. difficile* infection is more likely with broad spectrum antibiotics)
- Some antibiotics are considered unsafe in pregnancy or young children
- Dose adjustment may be required for renal or hepatic failure

Consider removal of any foreign body/indwelling device, drainage of pus, or other surgical intervention

For advice on appropriate investigation and management of infections, consult your local infection specialist(s) (microbiologist, infectious disease physician and/or antimicrobial pharmacist)

### ...then Focus (Day 2 onwards)

At 24-48 hours after starting antibiotics, make an **Antimicrobial Prescribing Decision**

- Review the clinical diagnosis
- Review laboratory/radiology results
- Choose one of the five options below
- Document this decision

#### Options

1. Stop antibiotic(s)
  - no evidence of bacterial infection, or infection resolved
2. Switch from intravenous to oral antibiotic(s)
  - if patient meets criteria for oral switch
3. Change antibiotic(s)
  - narrower spectrum, if possible;
  - broader spectrum, if indicated
4. Continue current antibiotic(s)
  - review again after further 24 hours
5. Outpatient parenteral antibiotic therapy
  - consult with local OPAT team

Developed by the RCPI Hospital Antimicrobial Stewardship Working Group (2012)  
Adapted, with permission, from the UK Department of Health "Start Smart, Then Focus"  
hospital antimicrobial stewardship programme

# ANTIBIOTIC CARE BUNDLE

What are the 4 bundles of care?  
Care Bundles

1. Antibiotic Care Bundle.
2. Urinary Catheter Care Bundle.
3. Central vascular catheters (CVCs)
4. PVC Care Bundle.

# NURSING EDUCATION

## PATIENT POSITIONING

### POSITION

### EXPLANATION

Supine

Lying flat on back without a pillow.



Dorsal Recumbent

Lying flat on back. Patient head elevated on a pillow.

Fowlers

1. Head of bed is elevated 45-90 degrees
2. High fowlers: Head of Bed is at 90 degrees
3. Semi-fowlers: Head of Bed is at 30-45 degrees.
4. Low fowlers: Head of Bed is at 15- 30 degrees



Tripod

Sitting at the side of bed and leaning on the side table.

Prone

patient lies on the abdomen with head turned to one side



Lateral

patient lies on one side of the body with the top leg in front of the bottom leg and the hip and knee flexed

Trendelenburg

HOB is low, foot of bed is raised



Reverse Trendelenburg

HOB is elevated, foot of bed is lowered.



Lithotomy

patient is on their back with hips and knees flexed and thighs apart.

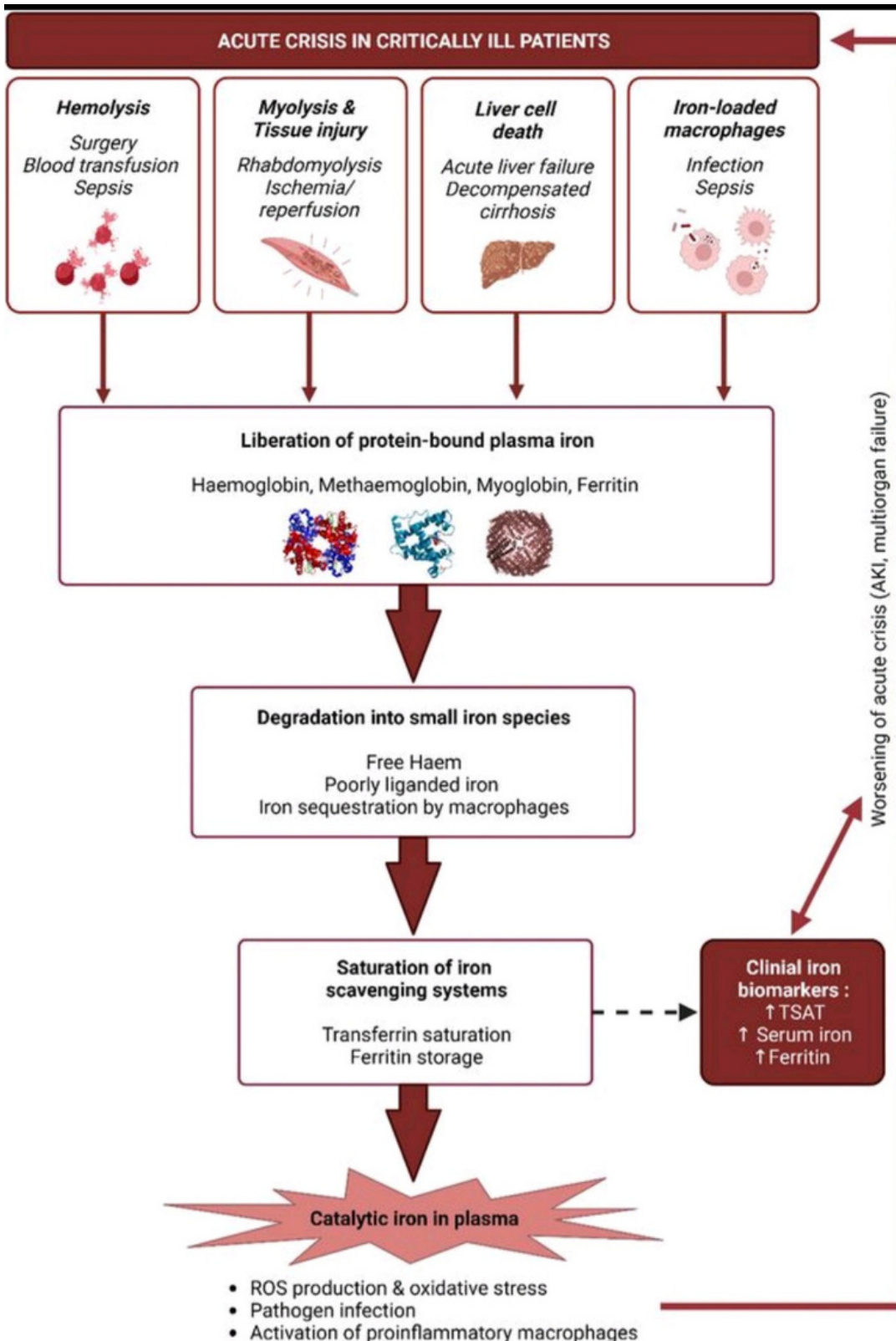


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## FERRITIN AS MARKER OF CRITICAL ILLNESS



Elevated ferritin concentration is a marker of high levels of stored iron. The detection of ferritin concentration is not only an important indicator to diagnose diseases with iron overload or iron deficiency but also a marker of inflammatory conditions or autoimmune disorders

# CAR T-cell therapy: A "living drug"

## CAR T-Cell Therapy

For decades, the foundations of cancer treatment have been surgery, chemotherapy, and radiation therapy. These continue to be critical mainstays of treatment, but new categories of treatment have recently helped transform the treatment picture for people with cancer

.Since 2017, six CAR T-cell therapies have been approved by the Food and Drug

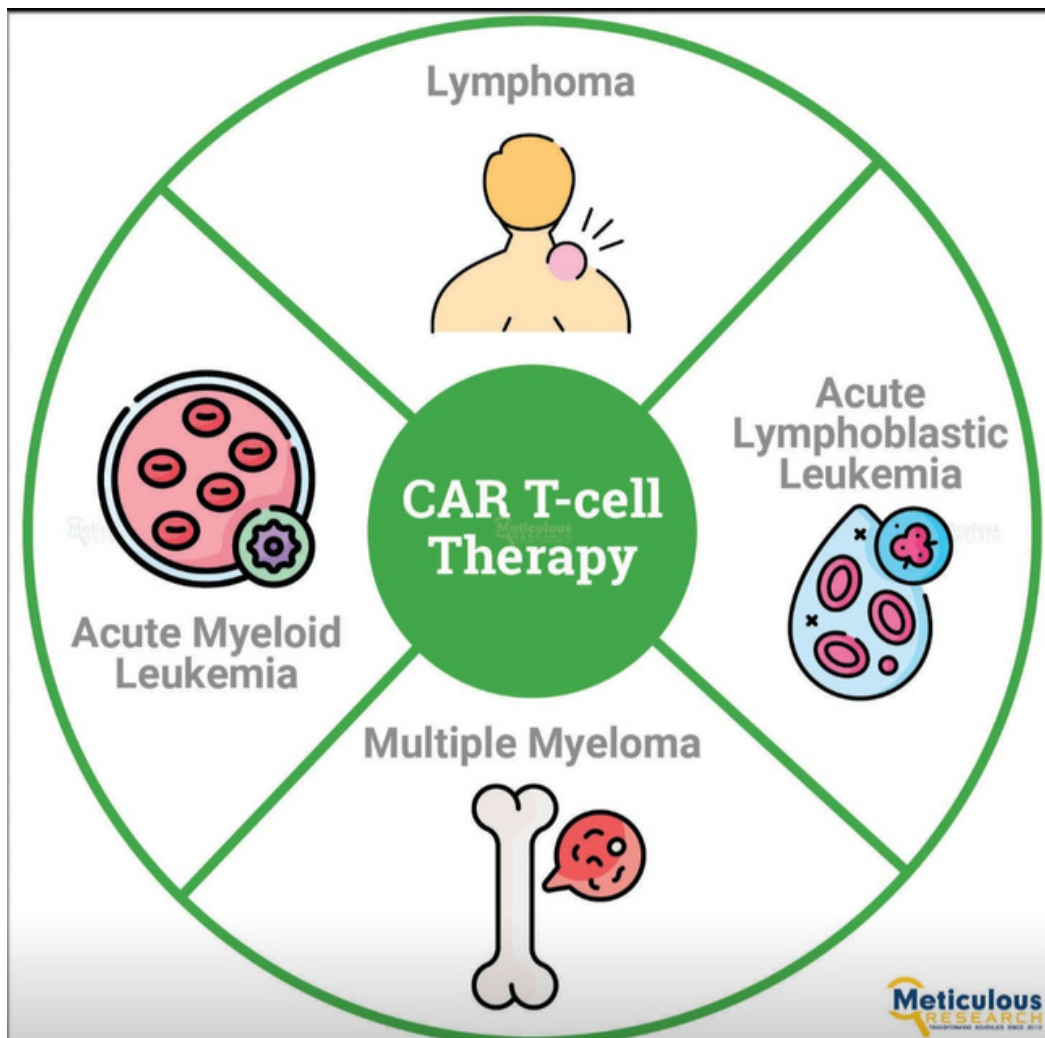
Administration (FDA). All are approved for the treatment of blood cancers, including

lymphomas, some forms of leukemia, and, most recently, multiple myeloma

Currently available CAR T-cell therapies are customized for each individual patient. They are made by collecting T cells from the patient and re-engineering them in the laboratory to produce proteins on their surface called chimeric antigen receptors, or CARs. The CARs recognize and bind to specific proteins, or antigens, on the surface of cancer cells.

After the revamped T cells are "expanded" into the millions in the laboratory, they're then infused back into the patient. If all goes as planned, the CAR T cells will continue to multiply in the patient's body and, with guidance from their engineered receptor, recognize and kill any cancer cells that harbor the target antigen on their surface

The CAR T-cell therapies approved by FDA to date target one of two antigens on B cells, CD19 or BCMA.



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**1 Preparation**

- Suction Tools (DL, etc.)
- Oxygen Position
- Monitors
- Assistants
- IV access
- Drugs

**2 Preoxygenation**

100% O2 for 3min/8 breaths + apneic oxygenation (NP at 15L/min)

**3 +/-Pretreatment**

- Local anesthetic
- Analgesia (i.e. fentanyl)

**4 Paralysis/Induction**

- Induction: Ketamine, Etomidate, or Propofol
- Paralytic: succinylcholine or rocuronium

**5 Position**

Chin to win!  
(also 'sniffing position')

**6 Pass the tube + confirm**

- Watch it pass through cords
- Mist in tube
- EtCO2, SpO2
- Auscultation
- CXR

**7 Post intubation care**

- Continuous monitoring
- Maintain sedation



**Live Surgical  
Workshop  
Dr Mitesh Modi**





**Kabrau  
Superspeciality  
Camp  
Mogaldham temple**





**Republic Day  
celebration**

**26th January  
2024**





**CPR & Cardiac Awareness Talk**

@

**Kutch Chemicals Jindal Steel**





## ANESTHESIA DEPARTMENT

# DR PRAGYA GUPTA



DR PRAGYA GUPTA  
NEURO ANESTHETIC

DIVINE LIFE HOSPITAL,  
ADIPUR

### Education

MD Anesthesiology

(Vardhman Mahavir Medical College, Delhi)

Post Doctoral Advance Fellowship in Neuroanesthesia &  
Neurocritical care

( SGPGIMS, Lucknow)

DNB Anesthesia

National Board of Examinations, Delhi

Member of National Academy of Medical Science

### Expertise

Neuro Anesthesia & Neuro Critical Care

Neuro Endoscopic Procedures

Airway Management

Minimal Invasive Neurosurgeries

Post Operative Pain Management

Available Full Time

Divine Life Hospital, Adipur



# AI ENABLED X RAY REPORTING TOOL



## AI IN RADIOLOGY

AI tools can assist radiologists in interpreting chest X-rays, but their real-life diagnostic accuracy remains unclear.”

Instead of merely identifying the presence or absence of abnormalities on an image, these AI reports convey complex diagnostic information, detailed descriptions, nuanced findings, and appropriate degrees of uncertainty. In short, they mirror how human radiologists describe what they see on a scan.

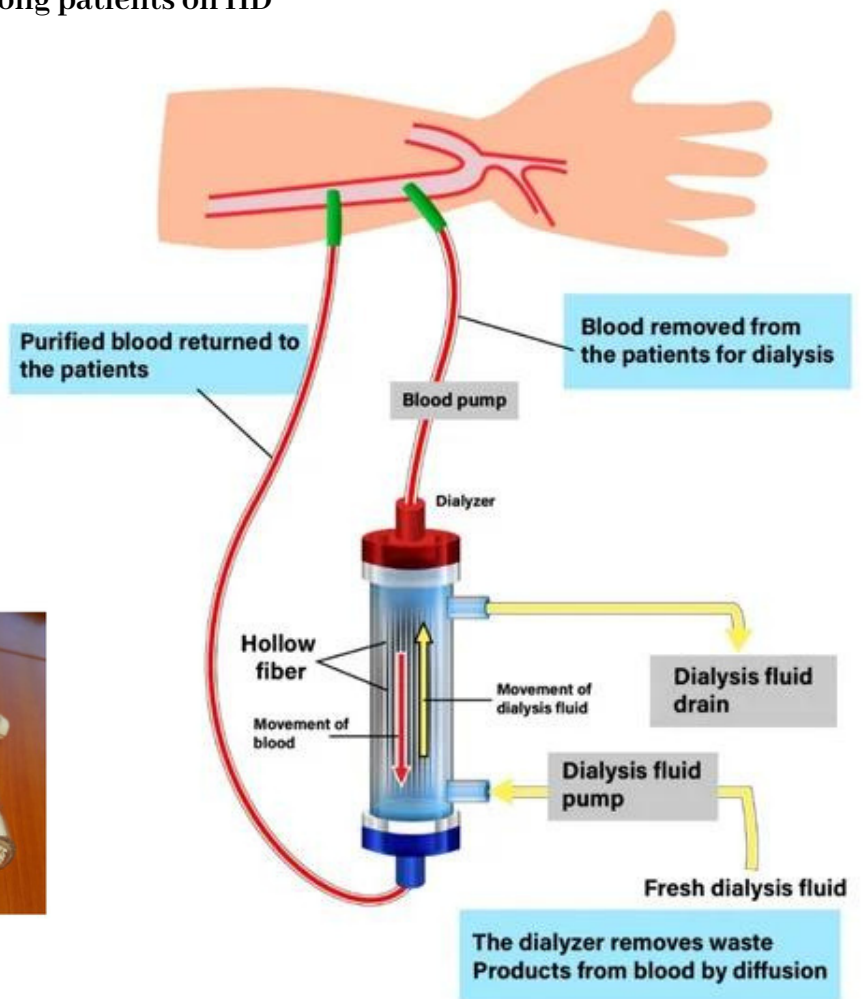
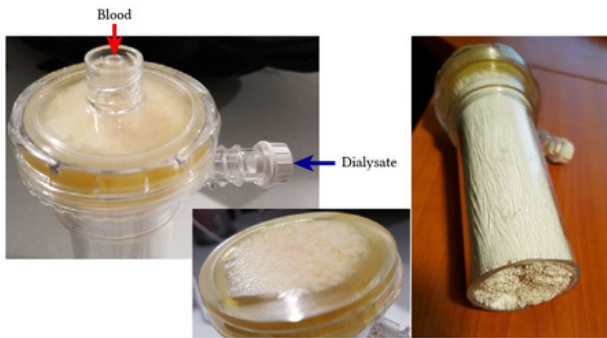
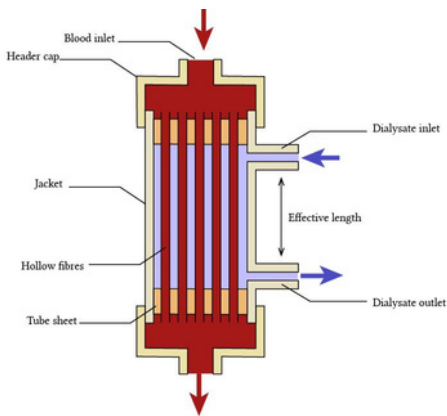
AI enabled Portable X ray is being used by Government for screening of Tuberculosis in TB Programme.

**FUTURE TECH**



The procedure of hemodialysis. A patient is connected to a dialysis machine and their blood is pumped out via vascular access and filtered using a dialyzer (an artificial kidney containing up to 15,000 hollow fiber membranes). The blood is then pumped back into the patient's body.

Tracing from history, cellulose-based membranes and synthetic polymer membranes had progressive improvement in recent years. Although synthetic membranes are the most commercialized membrane type, they do not reduce mortality or dialysis-related adverse effects in patients with ESRD. Current innovations in membrane development are focused on the improvement of hemocompatibility and protein-bound uremic toxin removal, as well as the reduction of oxidative stress and albumin loss, with the ultimate aim of reducing mortality among patients on HD



Pls Join our LinkedIn Group : <https://www.linkedin.com/groups/9233179>



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# BRAIN TEASERS



There are several students and a single teacher in the classroom. The students are giving their final examination, and all of them are sincerely sitting at their desks and brainstorming answers—all but one. One of the students is cheating in the exam, and you have to find out who.

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Dialysis Center - Rapar