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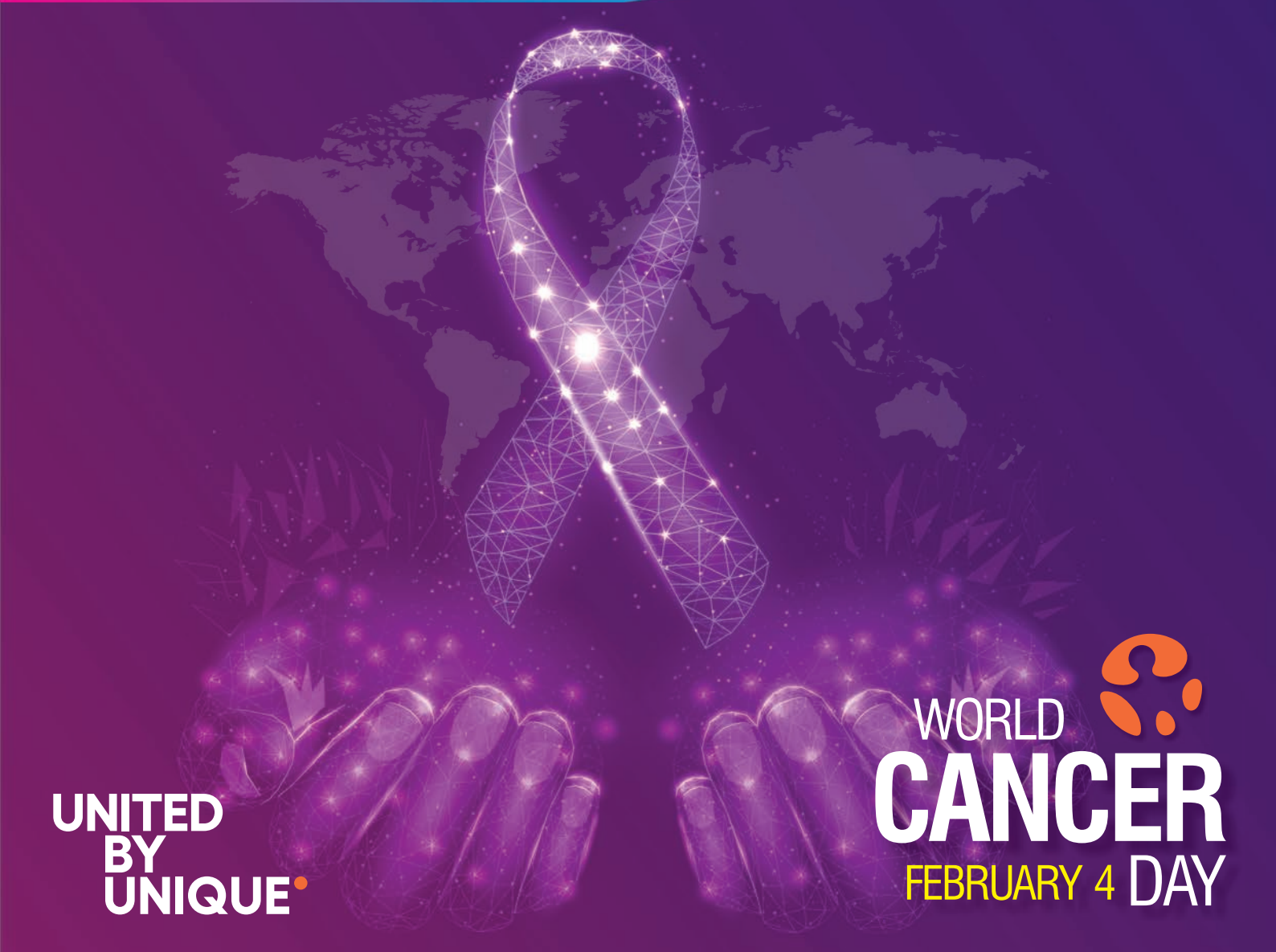
Sri Ramakrishna
Hospital (Multi-Speciality)

pulse

Happenings at Sri Ramakrishna...

49 Years of Excellence



UNITED BY UNIQUE

WORLD CANCER DAY
FEBRUARY 4

Shri.R.Sundar
Managing Trustee

I am filled with immense pride and gratitude for the growth and innovation we have achieved together. I am delighted to be a part of the team that has made remarkable progress over the years. Our commitment to providing exceptional healthcare and serving our community has always been stronger, and I am proud of the strides we have taken together.

On this **World Cancer Day February 04, 2025,** we come together to reflect on our commitment to a world where cancer care is accessible, equitable, and compassionate. At our Sri Ramakrishna Hospital, we stand firm in our dedication to early detection, advanced treatment options, and comprehensive rehabilitation programs. We recognize that the journey through cancer is not just a medical challenge but also an emotional, social, and financial one.

As a community, let us amplify awareness, encourage regular screenings, and break the stigmas associated with this condition. Together, we can foster hope, inspire resilience, and drive change in cancer care. To all patients, caregivers, and healthcare warriors, we honor your courage and commitment. Let us pledge to fight cancer with unwavering determination and compassion.

Dr.S.Rajagopal
Medical Director

Sri Ramakrishna Hospital has consistently been at the forefront in conducting diverse academic programs, complementing its clinical achievements. The focus on Clinical Club meetings, where we engage in discussions on intriguing cases, significantly enriches the professional development of our team.

This month's spotlight on **Oncology and Dental & Maxillofacial Surgery** underscores our steadfast commitment to staying at the forefront of medical advancements and addressing a wide array of healthcare needs, ultimately benefiting both our medical professionals and the overall quality of patient care.

World Cancer Day 2025 calls on us to unite under the theme **"United by Unique"** emphasizing personalized care and recognizing the distinct needs of each patient At Sri Ramakrishna Hospital, we remain dedicated to advancing cancer care through cutting-edge technology, evidence-based practices, and a multidisciplinary approach. Our efforts extend beyond treatment to include prevention, early detection, and survivorship programs, ensuring care is both holistic and patient-centered.In addition to clinical excellence, our focus includes community outreach, empowering individuals to take charge of their health through awareness and prevention initiatives.

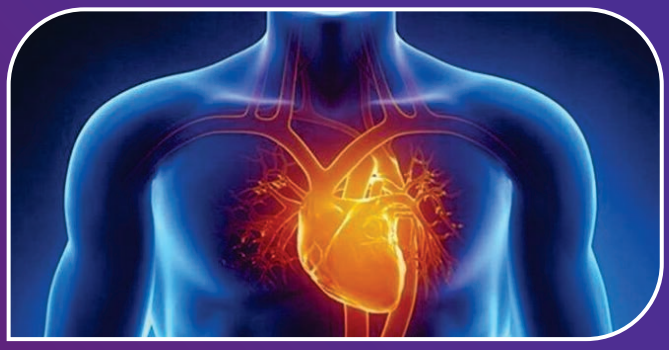
Let us unite on this occasion to reaffirm our shared mission of reducing the cancer burden. Together, we can make a lasting impact-one that transforms lives and inspires hope for a healthier future.

ROAD SAFETY AWARENESS RALLY – 10.01.2025

Sri Ramakrishna Hospital organized Road Safety Awareness Rally on January 10, 2025, as a part of the National Road Safety Week 2025. The event highlighted the significance of road safety and focuses on instilling responsible driving habits among people.

Thiru R. Sundar, Managing Trustee of Sri Ramakrishna Hospital, accompanied by Thiru. Sitrarasu, Additional Deputy Superintendent of Police flagged off the rally along with Dr. S. Rajagopal, Medical Director, Dr. S. Alagappan, Medical Superindentent, Dr. Manjunathan, Dr. Parthiban, Emergency Medicine Consultants of Sri Ramakrishna Hospital at the Government Women's Polytechnic College Signal, Coimbatore.

Over 200 enthusiastic NSS Volunteers from Sri Ramakrishna Educational Institutions and Hospital Nursing staff took part in this rally and promoted road safety awareness. The participants carried placards displaying slogans, and impactful messages about road safety rules, and responsible driving key like wearing helmets, avoiding mobile phone usage when driving, and adhering to speed limits.



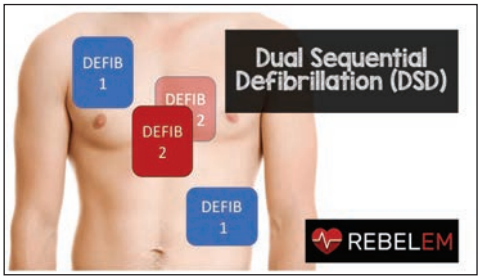
LA-CA (Life After - Cardiac Arrest) (Advanced Resuscitation Methods)

Introduction: Resuscitation during & after cardiac arrest has evolved significantly over the years with the introduction of newer techniques and approaches aimed at improving outcomes. The main goals during resuscitation are to restore blood flow to vital organs, particularly the brain and heart, and to achieve a successful return of spontaneous circulation (ROSC). Here are some of the newer methods and strategies:

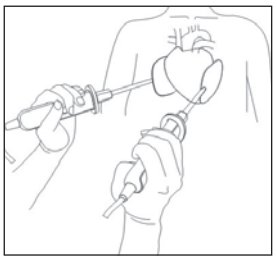
- **APC-(Auto Pulse CPR)**
- **DSD/ID– (Double sequence/Internal Defibrillation)**
- **ECPR-(Extra Corporeal Membrane CPR)**
- **SAAPT- (Selective Aortic Arch Perfusion Therapy)**
- **TTM-(Targeted Temperature Management)**

AutoPulse CPR: APC refers to the use of the AutoPulse Resuscitation System, a mechanical chest compression device designed to deliver consistent, high-quality cardiopulmonary resuscitation (CPR). It is widely used in pre-hospital, in-hospital, and transport settings to improve outcomes for patients in cardiac arrest. Unlike manual CPR, the AutoPulse uses a band system to deliver compressions, providing more effective circulation of blood to the brain and heart. It provides better cerebral & coronary perfusion, consistent quality of CPR, minimize interruptions during CPR, reduces the risk to rescuers. Some limitations are may not fit extremely small, large, or obese patients. Cost of the APC is very high. Studies have shown that AutoPulse may improve return of spontaneous circulation (ROSC) rates and survival to hospital admission.

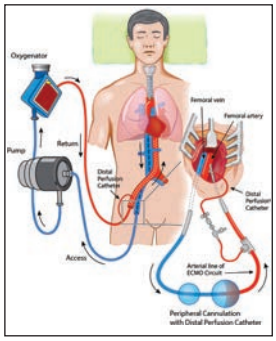
DSD: Double Sequential Defibrillation (DSD) is a resuscitation technique used for refractory ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT) that does not respond to conventional single-defibrillator shocks, high-quality cardiopulmonary resuscitation (CPR), and medications like epinephrine or amiodarone. In DSD, two defibrillators are used to deliver two electrical shocks in rapid succession, or simultaneously, to improve the chances of restoring a normal heart rhythm. One set of pads is placed in the standard anterior-apical position. The second set of pads is placed in an alternative position, often anterior-posterior or lateral to ensure a different vector of current. Both defibrillators are charged to the appropriate energy level (often 200J or more, depending on the device and protocol).The shocks are delivered either simultaneously or in rapid succession. DSD aims to depolarize a greater amount of myocardial tissue by using multiple vectors of current, which may help terminate refractory arrhythmias. Few challenges in DSD are increased myocardial damage, coordination issues, equipment requirements, electrical hazard may occur.



Internal Defibrillation: Internal defibrillation is a medical procedure in which an electrical shock is delivered directly to the heart to restore a normal rhythm, particularly in cases of life-threatening arrhythmias such as refractory ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT), cardiac arrest during surgery. Unlike external defibrillation, internal defibrillation is performed with electrodes placed directly on the heart, often during surgery or via specialized tools. This procedure is performed by placing one paddle is placed on the anterior surface of the heart and other paddle is placed on the posterior or lateral surface.

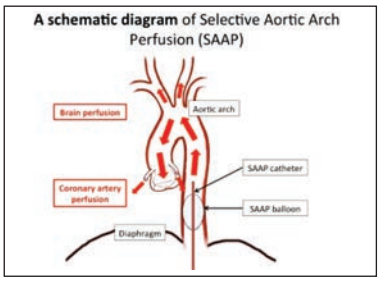


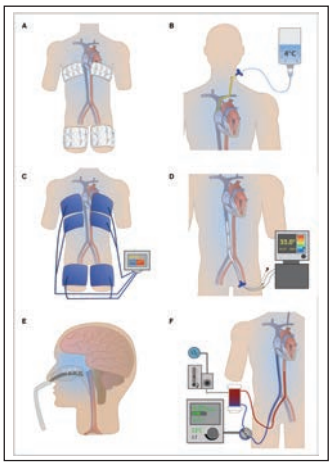
Begin with 10J for defibrillation and increase as needed. Open cardiac massages is performed between shocks. Direct application of the electrical shock ensures the current reaches the heart with minimal impedance. Lower energy levels reduce the risk of damage to surrounding tissues, such as the lungs or skin. Possible complications include Cardiac injury, Burns/scars, Infection may occur.



ECPR: ECPR (ECMO), also known as extracorporeal life support, is a recent introduction in the management of cardiac arrest. It's uses well documented in the neonatal and pediatric population and in adult for refractory respiratory failure and cardiogenic shock. Use in refractory cardiac arrest is also known as extracorporeal CPR. Extracorporeal CPR is a bridging therapy to definitive treatments, such as percutaneous coronary interventions, cardiac bypass surgery, or heart transplant. ECPR is mainly indicated in patients with good premorbid status before cardiac arrest, intervention to curative, not palliative, reversible trigger event for cardiac arrest(dysrhythmia, STEMI). The ECMO equipment consists of a blood pump, a venous reservoir, an oxygenator for exchanging both oxygen and CO2 and a heat exchanger to warm the blood used. The whole system is monitored through pressure, oxygen saturation, and temperature monitors. Three types of ECMO circuits are available (Veno-Arterial , Veno-Venous , Arterio-Venous). The ECMO circuit is initially primed with fresh blood, which is then pumped through the Circuit. During maintenance of ECMO, hemodynamic parameters, urinary output, hemato- logic indices, fluids, and electrolytes are monitored. Extracorporeal CPR complications can be mechanical, medical, or both. Mechanical complications-consist of clots in the circuit; mediastinal bleeding from tears to the great vessels; cxygenator failure; and malfunction of the blood pump, oxygenator, heat exchanger, and sensors. Medical complications include intracranial and systemic hemorrhage, initial cardiac stunning that may occur soon after initiation of ECMO, pneumothorax, acute kidney injury, GI bleeding, sepsis, and metabolic derangement. Advanced age, advanced malignancy, poor baseline neurologic function, suspected aortic dissection, unwitnessed cardiac arrest are some contra-indications to initiate ECPR. Extracorporeal CPR must also be accompanied by appropriate post-cardiac arrest management, including targeted temperature and hemodynamic management and early coronary angiography for definitive treatment. At present, survival rates are low, but can be improved with EMS and ED training, appropriate patient selection, and more widespread application of the technology.

SAAPT: Selective aortic arch perfusion is an extracorporeal perfusion therapy providing effective blood flow during cardiac arrest, improving chance of ROSC and limiting time-critical ischemic injury and reducing cardiac arrest and CNS damage. SAAPT can be used for cardiac arrest and hemorrhagic-induced traumatic cardiac arrest. The procedure involves insertion of a femoral artery large-lumen balloon occlusion catheter advanced to the descending thoracic aorta. Balloon inflation isolates the aortic arch vessels, perfusing the coronary, carotid, and vertebral arteries. If the limit of the exogenous oxygen carrier is reached, oxygenated autologous blood can be provided with a closed-loop circuit. Full ECPR can follow SAAPT if prolonged extracorporeal perfusion is required.

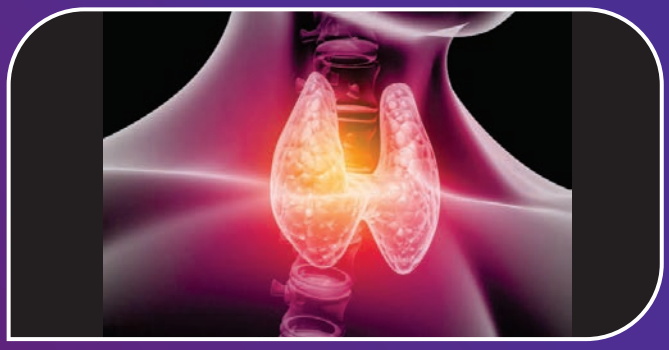




Targeted Temperature Management (TTM): TTM also known as therapeutic hypothermia, is a medical treatment used to regulate the body temperature of patients in critical conditions, such as after cardiac arrest or severe brain injury. The goal of TTM is to improve outcomes by slowing the brain's metabolism, reducing cell damage, and potentially preserving neurological function. TTM mainly indicated in patients with cardiac arrest, severe brain injury. The target temperature typically ranges from 32°C to 36°C (89.6°F to 96.8°F). Some studies suggest lower temperatures may offer neuroprotection. The most common method for TTM is cooling (hypothermia), but in some cases, normothermia (keeping the body at normal temperature) may be preferred, depending on the clinical scenario. Two methods (surface cooling & Invasive cooling) are widely used. Main mechanism behind the TTM is to reduces ischemic injury by slowing down metabolic demands of cells, it may help to prevent inflammation and oxidative stress-which can damage tissues after a cardiac arrest, it can limit cellular apoptosis (programmed cell death) in tissues that suffered from oxygen deprivation. TTM is typically maintained for 24-48hrs depends on the patient's condition. Complications include Shivering, Infection, Electrolyte Imbalance may happen.The use of TTM after cardiac arrest, especially if administered within a specific window (typically within 6 hours post-arrest), has been shown to improve survival rates and neurological outcomes.

Dr.M.PARTHIBAN
M.B.B.S., M.E.M.,

E.R. Consultant



Blazing Heat And Raging Hormones : Unraveling Hyperpyrexia in ER

A 39-year-old male patient was brought to the ER with complaints of decreased response for one hour. On initial 10 second assessment, patient was stuporous, diaphoretic, had frothy oral secretions and increased work of breathing. So, patient was triaged to RED zone, connected to continuous cardiac monitoring and secured IV line.

	Findings	Interventions
Airway	Threatened airway Frothy secretions present	Oral Suctioning done
Breathing	Tachypnoeic Dyspnoeic, increased work of breathing B/L air entry +, B/L crackles present Spo2-65% on RA.	In view of airway protection and respiratory failure, pt was intubated using inj. Propofol 100mg ,inj.succinyl choline 100mg and on mechanical ventilation.
Circulation	HR-180 /min, BP-120/90 mmHg Peripheral pulses present S1 S2+	IVF 0.9% NS @100 ml/hr.
Disability	CBG-150 mg/dl, GCS –E2VTM4 B/L pupil 2 mm ERTL	
Exposure	Temperature : 108 F Diaphoretic Involuntary urination and defecation +	Inj .Paracetamol 1gm iv infusion Followed by IVF NS 1000ml bolus External cooling measures (ice packs) were done

Primary Survey Adjuncts: ABG -showed high anion gap metabolic acidosis with increased lactate (5 mmol/l). ECG showed sinus tachycardia. Ryles tube inserted and gastric lavage with cold saline given, which contained food particles. Foleys catheterisation done and urine output was high colored.

On reassessment, patient temperature reduced from 108F to 103 F, heart rate was 110/min
Echo showed adequate LV function.

Secondary Survey and Adjuncts:

Signs and Symptoms	H/o fever for 3 days for which patient took over the counter medications .H/o vomiting and breathing difficulty since morning. H/o recent travel to pune.
Allergic History	Nil
Medications and Past Medical History	Over the counter fever medications for past 2 days. No other significant comorbidities. Non alcoholic, non smoker
Last Meal	2 hours prior to presentation
Events Leading To Illness	Not known

HRCT thorax suggestive of aspiration pneumonia; CT brain – no significant abnormality USG abdomen mild raised renal cortical echoes, mild GB wall edema Blood investigations revealed increased neutrophil lymphocyte ratio, thrombocytopenia, elevated renal parameters s/o Acute kidney injury, deranged LFT with direct hyperbilirubinemia, elevated PT INR, elevated LDH, Creatine kinase, D- dimer, and procalcitonin. Very low TSH and high FT3, FT4 with BURCH and WARTOFSKY diagnostic score of 95 highly suggesting THYROID STORM. With clinical presentation and diagnostic work up , diagnosed as THYROID STORM / SEPSIS WITH DIC (DIC score > 5 compatible with overt DIC).

THYROID STORM

Introduction: Thyroid storm is an acute, severe, life-threatening hypermetabolic state caused either by excessive release of thyroid hormones causing Adrenergic hyperactivity or an increased peripheral response to thyroid Hormone in response to one or more precipitants.It is a clinical diagnosis and should not rely on lab results for diagnosis or to start treatment. The most common Underlying cause is Graves' disease. It is caused by thyroid-stimulating hormone (TSH) Receptor antibodies that stimulate excess and uncontrolled thyroidal Synthesis and secretion of thyroid hormones.

Burch and Wartofsky Point Scale (BWPS) for thyroid storm diagnosis:

The system is practical as it is based on clinical and physical criteria and it is sensitive for thyroid storm. It is not very specific. But Burch and Wartofsky point Scale score ≥45 appears more sensitive than a Japanese Thyroid Association Diagnostic criteria.

Burch and Wart of sky Scoring Points & Diagnostic Parameters	
1.Thermoregulatory Dysfunction	
Temperature °C(°F)	
37.2–37.7 (99–99.9)	5
37.7–38.3 (100–100.9)	10
38.3–38.8 (101–101.9)	15
38.9–39.4 (102–102.9)	20
39.4–39.9 (103–103.9)	25
≥40 (≥104.0)	30
2.CNS Effects	
Absent	0
Mild (agitation)	10
Moderate(delirium, psychosis, extreme lethargy)	20
Severe(seizures, coma)	30
3.GI hepatic Dysfunction	
Absent	0
Moderate(diarrhoea,nausea, vomiting,abdominal pain)	10
Severe(unexplainedjaundice)	20
4.Cardiovascular Dysfunction	
Tachycardia (beats/min)	
90–109	5
110–119	10
120–129	15
≥140	25
5.Congestive heart failure	
Absent	0
Mild (pedal edema)	5
Moderate (bibasilar rales)	10
Severe (pulmonary edema)	15
6.Atrial Fibrillation	
Absent	0
Present	10
7.Precipitating Events	
Absent	0
Present	10

Scoring system

Score of ≥45: highly suggestive of thyroid storm.
Score of 25–44: suggestive of impending storm
Score of <25: unlikely to represent thyroid storm.

Differential Diagnosis

- Infection and sepsis
- Sympathomimetic ingestion (e.g., cocaine, amphetamine, ketamine drug use)
- Heat exhaustion
- Heat stroke
- Delirium tremens
- Malignant hyperthermia
- Malignant neuroleptic syndrome
- Hypothalamic stroke
- Pheochromocytoma
- Medication withdrawal (e.g., cocaine, opioids)
- Psychosis
- Organophosphate poisoning

Treatment of Thyroid Storm:

1.Supportivecare

General: Oxygen, Cardiac monitoring
Fever: External cooling with ice packs or cooling blankets; Acetaminophen 325–650 milligrams PO/PR every 4–6 h
Dehydration: IV fluids, IV saline with 5% dextrose
Nutrition: Glucose, multivitamins, thiamine, and folate can be considered

2.Inhibition of peripheral adrenergic effects: Propranolol 0.5–1 milligrams IV over10 minutes, then 1–2 milligrams every few hours or Esmolol 250–500 micrograms/kgIV load, then 50–100 micrograms/kg/min

3.Inhibition of new thyroid hormone synthesis: Methimazole 20 milligrams every 6 h PO or Propylthiouracil loading dose of 500–1000 milligrams given PO and followed by 250 milligrams every4 h

4.Inhibition of thyroid hormone release (at least 1 h after step 3)
Lugol solution 8–10 drops PO every 6–8 h or Potassium Iodide five drops (0.25 mLor250 milligrams)PO every 6 h or IV iopanoic acid 1gram every 8 h for first 24 h, then 500 milligrams twice a day or Lithium carbonate

5.Preventing peripheral conversion of T4 to T3
Hydrocortisone300 milligrams IV initially, then 100 milligrams every 8 h or Dexamethasone 2 milligrams IV every6 h

6.Prevention of free thyroid hormones reabsorption: Cholestyramine 4 grams every 6 h

7.Treat precipitating event

8.Definitive therapy: Radioactive iodine ablation therapy or surgery may be necessary

Disposition and Follow-up

Thyroid storm patients require admission in intensive care unit. Patients with thyroid storm often have concomitant diseases precipitating the attack and require close monitoring. Complete recovery may take 1 week until circulating levels of thyroid hormones are depleted. Stable hyperthyroid patients with minimal symptoms can only be discharged for follow-up either by an endocrinologist or primary care physician, if the patient is already on medication with a clear plan of follow-up. In ER, Both infectious and non infectious causes of hyperpyrexia must be considered to avoid missing life threatening emergencies. Comprehensive assessment and appropriate diagnostic workup is vital for accurate diagnosis and management.

Dr.V.LAVANYA
MBBS.,DNB (Emergency Medicine)

Emergency Medicine Consultant

Adult Onset Cutaneous Mastocytosis

Cutaneous mastocytosis(CM) describes a group of rare disorders characterized by abnormal accumulation and proliferation of mast cells in the skin. In some cases, commonly in adults, cutaneous mastocytosis may occur in association with mast cell infiltration of various extracutaneous organs, in which case the disorder is referred to as systemic mastocytosis(SM).

A 34 year old male patient, presented to our OPD, with multiple dark spots over the trunk, followed by neck, face and limbs. Lesions were progressive, and there was no associated itching, redness or any systemic symptoms. No previous history of anaphylaxis or similar symptoms in his childhood. On examination, multiple hyperpigmented macules measuring 2- 4mm in size were seen over trunk, limbs, face and neck. Dariers sign was elicited and it was positive.

Differential diagnosis of idiopathic eruptive macular pigmentation, cutaneous mastocytosis and pityriasis lichenoides chronica were considered.

Results of a complete blood count, renal and liver function tests were within normal limits. Serum tryptase level was 9.12mcg/L (normal levels <11mcg/L). Pathology from a punch biopsy from a hyperpigmented macule on the back revealed epidermis showing hypergranulosis and prominence of basal melanocytes. Superficial dermis showing moderate perivascular infiltrates of lymphocytes admixed with several mast cells. Special stain with toluidine blue and immunohistochemistry for CD 117 highlighted mast cells and CD 163 was negative, thus confirming the diagnosis of CM.

Mastocytosis is a diverse group of disorders characterised by the expansion and accumulation of mast cells in one or more organ systems. It can affect the skin, bone marrow, liver, spleen, gastrointestinal tract, or lymph node. Mastocytosis is caused by a mutation of the KIT gene on the 4q12 chromosome. Mast cells contain chemicals that mediate inflammation (eg, via histamine, leukotriene C4, prostaglandins, tryptase, TNFα, and IL-8).

Cutaneous mastocytosis manifests in three recognised forms: 1.maculopapular cutaneous mastocytosis (urticaria pigmentosa,telangiectasia macularis eruptiva perstans,bullous mastocytosis),the most common form, 2.diffuse cutaneous mastocytosis, and, 3.cutaneous mastocytoma. In all forms, rubbing or scratching an area of skin affected by mastocytosis results in redness, swelling, itching, and occasionally blistering within a few minutes (Darier sign).

Mast cell mediator-related symptoms such as itching, flushing, hypotension, abdominal pain, cramping, reflux, ulcers, diarrhea, headache, depression, cognitive symptoms and anaphylaxis occur in both CM and SM. Most commonly recognized triggers were food (29%), Hymenoptera stings (22%), and medications (15%).

Cutaneous mastocytosis is usually diagnosed by its clinical appearance and positive Darier sign, in the

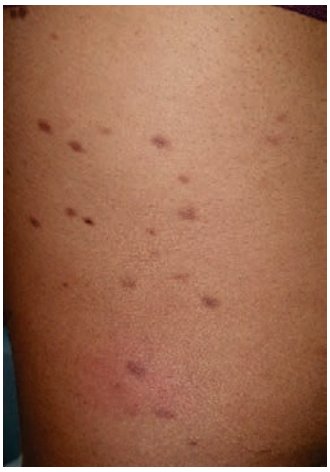
absence of systemic symptoms and signs. Skin biopsy and histology can be helpful for confirmation of CM.

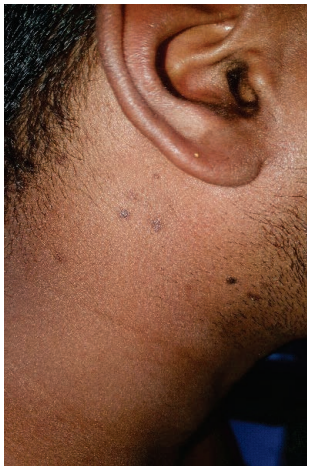
Adult onset cutaneous mastocytosis is very persistent and often leads to a diagnosis of SM. An elevated serum tryptase level has been related to clonal mast cell disease.

The aim of pharmacological management is symptomatic control by reducing mediator production/release and blocking released mediators.

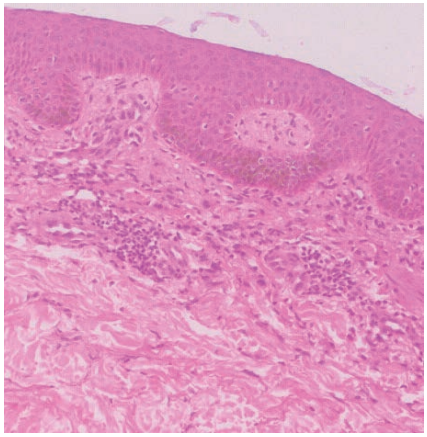
First line therapy includes H1 and H2 antihistamines and short-term topical corticosteroids. Phototherapy is the second-line therapy which may be considered when antihistamines do not produce the expected improvement. New therapeutic options include omalizumab and KIT-targeting agents.

This patient was treated with antihistamines and topical steroids. After 1 month of follow up, there were no new lesions. He was adviced to come for regular follow up.

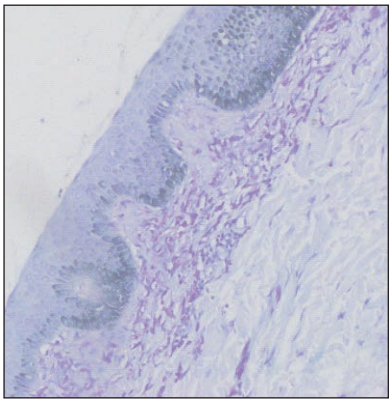


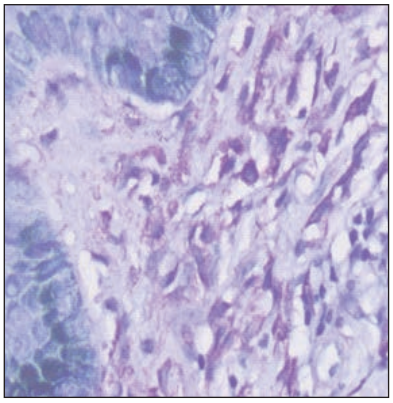


Hyperpigmented macules over trunk and neck

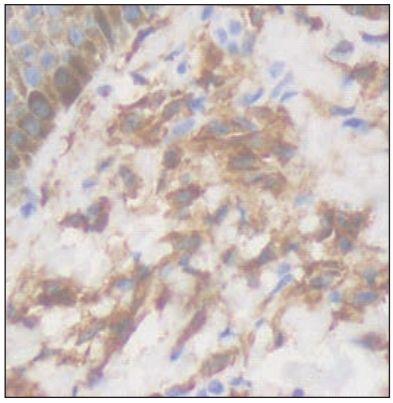


Papillary and Superficial dermal mononuclear perivascular infiltrate; x 100 Magnification H&E





Toludine Blue Stain Highlights mast cells (x 100 “D” & x400 “E” magnification)



Cytoplasmic positive staining for CD-117 in mast cells by Immunohistochemistry

Dr. N.M.VINITHA
MD DVL

Consultant Dermatologist

Sri Ramakrishna Hospital

ORGAN DONATION AWARENESS WALKATHON – 22.01.2025

Sri Ramakrishna Hospital took a noble step to create awareness about organ donation, by organizing an Organ Donation Awareness Walkathon on January 22, 2025, at Race Course, Coimbatore. The event focused on people pledging their support for organ donation and spreading awareness about its life-saving impact.

An integral part of achieving voluntary 1 Lakh Organ Donation Registration, the Hospital organized this Organ Donation Awareness Walkathon to emphasize the importance of organ donation at Race Course. Thiru R. Sundar, Managing Trustee of SNR Sons Charitable Trust, Thiru A. Saravana Sundar IPS, Commissioner of Police, Coimbatore City, flagged off the walkathon. This initiative reinforced the hospital's commitment to fostering a culture of organ donation and saving lives through organ transplantation.

Students from Sri Ramakrishna Educational Institutions, along with bikers and other volunteers from various walks of life, actively participated in the walkathon event wearing Traditional Cultural Attire. Together they walked to educate the people about the significance of organ donation and encouraged them to become volunteers.

Sri Ramakrishna Hospital
(Multi-Speciality)

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DONATE ORGANS...SAVE LIVES....

Scan Me

For Registration

GIFT ORGANS GIVE LIFE

THE HUMAN BODY IS
TOO PRECIOUS
ONE ORGAN DONOR
CAN HELP
SAVE 8 LIVES

360° Health Care

Sri Ramakrishna Hospital

(Multi-Speciality)

395, Sarojini Naidu Road, Siddhapudur, Coimbatore

For appointments: **0422 - 3500 000 / 4500 000**

info@sriramakrishnahospital.com
www.sriramakrishnahospital.com