THE TAMIL NADU Dr. M.G.R. MEDICALUNIVERSITY

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REGULATIONS

OF

PLASMA EXCHANGE IN RODENTICIDE POISONING

ACADEMIC YEAR 2025 ONWARDS

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI-600032

REGULATIONS
PLASMA EXCHANGE IN RODENTICIDE POISONING

Name of certificate course	:	Certificate Course on “Plasma Exchange in Rodenticide Poisoning”
Duration of course	:	8 weeks (online modules once a week and one contact session)
Number of Candidates admissible	:	40 per batch
Name of the training program in full (CAPITAL LETTER)	:	ONLINE CERTIFICATE COURSE “PLASMA EXCHANGE IN RODENTICIDE POISONING”
Abbreviation of the training Program	:	Certificate course ((PLEX) in Rodenticide Poisoning

Aim of Course: To train doctors caring for patients who ingest rodenticide poison and develop liver damage in the use of plasma exchange treatment.

Name of Department offering the Course: The Tamil Nadu Dr. MGR University will hold the online classes, once a week for 8 weeks. The contact class will be held at Christian Medical College, Vellore.

Background / Introduction:

Rodenticidal ingestion as a means of suicide is a serious problem especially among the youth in Tamil Nadu and other parts of India. Urgent liver transplantation, the definitive treatment for acute liver failure induced by rodenticide (phosphorus) ingestion is inaccessible to most patients in our country. [Ref 1,2] Recently, plasma exchange [PLEX], a non – transplant treatment for acute liver failure has been shown to improve survival. [Ref 3 - 7]. The Tamil Nadu Government has initiated a series of measures to address this problem. A "hub and spoke" model to care for these patients is now provided in each district of Tamil Nadu. Persons who ingest this poison are seen in nearby primary health center where poison decontamination and initial resuscitation is done, the patient is referred to nearest Taluk hospital for observation and if liver / other vital organ dysfunction / failure develops, patient is referred to the district Government Medical college hospital for PLEX, if needed. In 2022 – 2023, under the Tamil Nadu Accident and Emergency Care Initiative – National Health Mission (TAEI – NHM), 1237 rodenticidal hepatotoxicity patients were treated by PLEX in Government Medical College hospitals. [Ref 8] Guidelines for management of rodenticide poison have been issued by TAEI – NHM and by the Tamil Nadu chapter of Indian Society of Gastroenterology, with a focus on non – liver transplant treatments. [Ref 9,10].

The majority of the 38 districts in Tamil Nadu now have facilities for PLEX to treat rodenticide poison. There is a need to strengthen the PLEX teams and provide upgradation of expertise in delivery of PLEX and save more lives of patients who ingest rodenticide. With this background, the Tamil Nadu Dr MGR University proposes to initiate this certificate course to train doctors involved in caring for these patients. For ease of access, this course is planned as an online course, with two contact programs. This course will clarify the components of the PLEX team, the roles of different team members, discuss various aspects of PLEX to treat liver failure, selection of patients for PLEX treatment, etc. It is expected that overtime this course can be extended to nursing and paramedical staff as well.

Eligibility:

- The Course is open to All Postgraduate students and Faculty members working in Government Medical Colleges as well as self-financing Medical Colleges affiliated to the Tamil Nadu Dr. MGR Medical University and other Medical Universities in India.

- Postgraduate students undergoing and faculty members of D.M. (Hepatology / Gastroenterology/ Critical Care), M.D. (Medicine/ Paediatrics /Toxicology/ Anaesthesiology/ Transfusion Medicine/ Emergency Medicine/ Pathology) and Dip. in Clinical Pathology are in priority to apply to pursue the course.

Age Limit: NA

Eligibility certificate: NA

Registration: Candidates need to have their application forwarded by the Head of the department and Dean of the institution.

Medium of instruction: English

Admission: Candidates who wish to pursue this course may apply by down loading the application available in the University website.

Educational Methodology: This certificate course will be implemented in a hybrid format (online and contact teaching). Didactic lectures (8 pre-recorded modules) will be held once a week for 8 weeks. Each module is of 1 hour duration.

In addition to the 8 online lecture modules mentioned above, there will be one contact class. The first contact class will be conducted at the end of 8th Module. The contact class will provide real time exposure to the implementation of PLEX and how the PLEX team works.

On completion of each module, there will be a post – module test. Candidates will be permitted to access the next module only on completion of the post-module test of the previous module.

In addition to the formative assessment (ie. Online test after each module); a summative assessment (an Online test after completion of the course) will be done. Candidates need to achieve a minimum of 50% marks (combined formative and summative assessment scores) to pass the course.

Attendance: Candidates require 80% attendance (including at the contact class attended) to pass the course.

Whether the same Course is already in existence in any other State within India and / or outside India: Currently there is no course in “Plasma Exchange in Rodenticide Poisoning” in India and in the world, to the best of our knowledge.

Internal Assessment: NA

Qualifying Marks for pass: 50% of marks in aggregate for 8 online modules, 2 contact programs (formative assessment) and the final (summative assessment) test.

University Examination: NA

Scheme of Examination:

S.No.	Module title / topics	Assessment
		Formative assessment
1 a	Rodenticide- Extent of problem	Test after taking each online module
1 b	Need for a dedicated Team to manage patients	
2 a	Assessing severity of liver injury in rodenticide. How often to monitor, what to monitor. When to refer for PLEX	
2 b	Introduction to PLEX: Technical Aspects of delivering PLEX – I Types of PLEX, Replacement fluid, Machine Handling, Troubleshooting	
3 a	Technical Aspects of Delivering PLEX- II Anticoagulation, Calcium replacement	
3 b	Prescription of PLEX –Dose, Flow rate. Individualizing the prescription Reporting format.	
4	Utility of PLEX in liver failure: RCTs, Meta-analysis, Effect of etiology	
	Contact program - I	Test after contact program
5 a	PLEX in rodenticidal hepatotoxicity- I Timing, Indications, Contraindications Counselling about liver transplant	Test after taking each online module
5 b	PLEX in rodenticidal hepatotoxicity- II Safety and Monitoring, Futility, Long-term management	
6	How does PLEX work in liver failure?	
7	Safe delivery of PLEX in liver failure: Vellore Protocol,	

	Line placement, handling; Team approach	
8	Guidelines for managing rodenticidal hepato-toxicity – NHM. 'Hub and Spoke' model.	
	Contact program - II	Test after contact program
		Summative assessment
Pass mark	Minimum 50% of marks in aggregate in the formative assessment and in the summative assessment.	

<u>Program Outcomes</u>:

1. Awareness about rodenticide poisoning as an important mode of suicide in India
2. Awareness about the problem of lack of access to urgent liver transplantation in most patients with acute liver failure in India
3. Knowledge about plasma exchange (PLEX) as a non – transplant treatment to improve survival in rodenticidal hepatotoxicity
4. Knowledge about the "Hub and spoke" model to help triage patients who need specialized treatment like PLEX.
5. Tamil Nadu Accident and Emergency Care Initiative (TAEI – NHM) National Health Mission guidelines to manage rodenticide poisoning, with emphasis on non – liver transplant treatments.
6. Knowledge about who comprises the PLEX team to treat patients with rodenticidal hepatotoxicity. What are the roles and responsibilities of the different team members.
7. Details of PLEX: The clinician's responsibilities: Selecting the patient for PLEX. Counselling the patient and family about different treatment options.
8. Details of PLEX: The apheresis team's responsibilities. How to implement PLEX safely in a patient with liver failure. Trouble – shooting the PLEX machine.

Knowledge and Skills to be acquired by students on completion of the course:

1. Knowledge in types of acute toxic hepatitis caused by rodenticide ingestion.
2. Knowledge about current literature on PLEX to improve survival in patients with acute liver failure
3. Knowledge about composition of a PLEX team to treat rodenticidal hepatotoxicity. What are the responsibilities of the clinical team and the apheresis team members in the PLEX team?
4. Technical details of PLEX: components of PLEX machine. Prescribing PLEX treatment. Vascular access to perform PLEX. Possible complications of PLEX and how to avoid them.

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