Extracorporeal Therapy (ECT) Sub Registry
Data Collection Form Version 1.0

Institution: _____Patient Code:_____

Inclusion Criteria:
Please only enter information on any patient with ECT episodes performed during the time when the patient is still suffering the effects of poisoning.

Exclusion Criteria:

Exclude patients with:

- ECT performed after the acute clinical effects of poisoning have resolved (e.g., a patient who requires dialysis due to acute kidney injury from an overdose causing hypotension, but dialysis started after hypotension has resolved).
- ECT performed in patients thought not to have clinical symptoms related to poisoning (e.g., consults seen by toxicologists who are later thought to have a non-toxicological condition).ECMO or similar cardiovascular support as the only ECT therapy performed (i.e., ECMO performed without dialysis).

Data Collection:
Email questions related to this sub registry to Principal Investigator Joshua King, M.D., at joshjing@virginia.edu.

Patient Factors

Patient's presenting weight (kg) _____
Patient's height (inches) _____

Please indicate availability and values for the following labs as indicated:

Creatinine: ☐ Known ☐ Not Available ☐ Not Performed
If known - Enter values (mg/dL)
On admission _____ Peak _____ Baseline _____ ☐ Baseline Not Available
[Definition: *baseline Creatinine = lowest value in prior year*]:
Serum bicarbonate: ☐ Known ☐ Not Available ☐ Not Performed
If known - Enter values (mEq/L or mmol/L)
On admission _____ Nadir
pH: ☐ Known ☐ Not Available ☐ Not Performed
If known - Enter values
Initial _____ Nadir _____
Initial anion gap (using the formula AG = Na – Cl – HCO3 with no accounting for albumin):
☐ Known ☐ Not Available ☐ Not Performed
If known - Enter value (mEq/L) _____
Peak anion gap: ☐ Known ☐ Not Available ☐ Not Performed
If known - Enter value (mEq/L) _____
Initial osmolal gap (no ethanol correction): ☐ Known ☐ Not Available ☐ Not Performed
If known - Enter value (mOsm/kg) _____
Peak osmolal gap (no ethanol correction): ☐ Known ☐ Not Available ☐ Not Performed
If known - Enter value (mOsm/kg) _____

Past Medical & Renal History

Does the patient have any of the following (check all that apply): ☐ NONE
☐ Coronary artery disease
☐ Chronic pulmonary disease (e.g., COPD, OSA, pulmonary fibrosis)
☐ Congestive heart failure
☐ Hypertension
☐ Diabetes
☐ Existing kidney problem other than CKD/ESRD (e.g., polycystic kidney disease)
Please specify: _____
☐ Malignancy:
Please specify type: _____
☐ Chronic anticoagulation for any disease
☐ Chronic liver disease
☐ Psychiatric disease (depression, bipolar disorder, etc.)

Does the patient have ESRD? ☐ Yes ☐ No [Definition: *Patients on maintenance dialysis GFR <15 on maintenance*]
If yes, cause(s) of ESRD (if known)_____ ☐ Unknown
If yes, indicate type of maintenance dialysis?
☐ HD ☐ PD ☐ Home or Nocturnal Hemodialysis

Does the patient have CKD stage III or higher [Definition: *baseline GFR <60*]:
☐ Yes ☐ No ☐ Unknown/Not Applicable
If yes, what are the cause(s) of CKD)?_____, or ☐ Unknown

Does the patient currently have an organ transplant? ☐ Yes ☐ No
If yes, ☐ Kidney ☐ Liver ☐ Heart ☐ Lung ☐ Pancreas
☐ Other (including combination transplant)_____

Extent of Acute Renal Injury

Did the patient have acute kidney injury prior to ECT? [Definition: *Either a creatinine rise of ≥ 0.3 mg/dL above baseline or ≥150% above baseline; or, oliguria with urine output <400 mL/day or <0.5 mL/kg/hour for more than 6 hours?*] ☐ Yes ☐ No ☐ Unknown
If yes, was AKI due to poisoning? ☐ Yes ☐ No ☐ Unknown

Prior to starting ECT:
Was the patient oliguric (over 6 hours)? [Definition: *Approximately < 0.5 mL/kg/body weight urine output*]
☐ Yes ☐ No ☐ Unknown
Was the patient anuric (over 24 hours)? [Definition: ≤50 mL of urine in 24 hours]
☐ Yes ☐ No ☐ Unknown

Was this patient transferred from another hospital?
☐ Yes ☐ No ☐ Unknown
If yes, why was the patient transferred (check all that apply):
☐ Higher level of care ☐ Lack of bed availability ☐ Unable to perform extracorporeal therapy
☐ Other reason: _____ ☐ Unknown

For acute toxic exposures, approximately how much time (in hours) elapsed between exposure and initial hospital presentation?

Time Period (hrs) _____ ☐ Unknown

Approximately how long (in hours) after initial presentation did the patient receive their initial ECT?

Time Period (hrs) _____ ☐ Unknown

Was the patient hypotensive or hemodynamically unstable at the start of ECT? ☐ Yes ☐ No ☐ Unknown

Information on ECT Used

Did the patient have HD or SLED: ☐ Yes ☐ No ☐ Unknown

If yes, please fill out session information below for up to the first 5 sessions.

Dialysis Drug Removal Information

How many extracorporeal therapy sessions for drug/toxin removal? ☐1 ☐2 ☐3 ☐4 ☐5 ☐>5

Session 1

Type (check all that apply): ☐ HD ☐ SLED ☐Hemoperfusion ☐Albumin
Location of dialysis catheter: ☐ Internal jugular or subclavian ☐ Femoral ☐ Peritoneal ☐ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.):_____ ☐ Unknown
Duration: _____(hours)
Blood flow rate: _____(mL/min)
Dialysate flow rate: _____(mL/min)

Session 2

Type (check all that apply): ☐ HD ☐ SLED ☐Hemoperfusion ☐Albumin
Location of dialysis catheter: ☐ Internal jugular or subclavian ☐ Femoral ☐ Peritoneal ☐ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.):_____ ☐ Unknown
Duration: _____(hours)
Blood flow rate: _____(mL/min)
Dialysate flow rate: _____(mL/min)

Session 3

Type (check all that apply): ☐ HD ☐ SLED ☐Hemoperfusion ☐Albumin
Location of dialysis catheter: ☐ Internal jugular or subclavian ☐ Femoral ☐ Peritoneal ☐ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.):_____ ☐ Unknown
Duration: _____(hours)
Blood flow rate: _____(mL/min)
Dialysate flow rate: _____(mL/min)

Session 4

Type (check all that apply): ☐ HD ☐ SLED ☐Hemoperfusion ☐Albumin
Location of dialysis catheter: ☐ Internal jugular or subclavian ☐ Femoral ☐ Peritoneal ☐ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.):_____ ☐ Unknown
Duration: _____(hours)
Blood flow rate: _____(mL/min)
Dialysate flow rate: _____(mL/min)

Session 5

Type (check all that apply): ☐ HD ☐ SLED ☐Hemoperfusion ☐Albumin
Location of dialysis catheter: ☐ Internal jugular or subclavian ☐ Femoral ☐ Peritoneal ☐ Other
Type of filter or cartridge (e.g., Fresenius 160, Revaclear MAX, etc.):_____ ☐ Unknown
Duration: _____(hours)
Blood flow rate: _____(mL/min)
Dialysate flow rate: _____(mL/min)

Did the patient have CRRT? ☐ Yes ☐ No ☐ Unknown
If yes, then please include the following:
Approximate duration of CRRT used for poisoning only: _____ (hrs) ☐ Not available
[Note: Please determine as clearly as possible. Do not attempt to exclude "down time" such as when the machine is not actually running.]
Blood flow rate _____(mL/min) ☐ Not available
Dialysate flow rate ____(mL/hour) ☐ Not available

Did the patient have PD? ☐ Yes ☐ No ☐ Unknown
If yes, then please include the following:
Duration (check "continuous" if ongoing for ESRD or AKI): ____(hours) OR ☐ Continuous
Exchange volume ____(L) ☐ Unknown
Number of exchanges per day____ ☐ Unknown
Type of Dialysate
☐ 1.5% dextrose ☐ 2.5% dextrose ☐ 4.25% dextrose ☐ Icodextrin or polymer solution
☐ Other - Please describe: _____ ☐ Unknown

Did the patient have Hemoperfusion? ☐ Yes ☐ No ☐ Unknown
If yes,
Duration ____(hours) ☐ Not available
Blood flow rate _____(mL/min) ☐ Not available
Was hemodialysis simultaneously performed? ☐ Yes ☐ No ☐ Not available
[Note: If yes, also please describe above]
Type of filter ☐ Charcoal ☐ Other resin - Please specify: _____ ☐ Not available
Name of filter column (if known) _____ ☐ Not available
Number of filter cartridges required:
☐ One ☐ > One - Please specify how many: _____ ☐ Not available

Did the patient have Plasmapheresis or Plasma Exchange: ☐ Yes ☐ No ☐ Unknown
If yes,
Amount of plasma exchanged (specify liters or plasma volume):_____
Type of Replacement fluid: ☐ Albumin ☐ Albumin/Saline ☐ FFP ☐ Saline
How many sessions?:

Did the patient have RBC Exchange Transfusion: ☐ Yes ☐ No ☐ Unknown
If yes,
Volume exchanged (# Units RBC exchanged)_____ ☐ Not available
How many sessions?_____ ☐ Not available

Did the patient have Albumin Dialysis? ☐ Yes ☐ No ☐ Unknown
If yes,
Duration ____(hours) ☐ Not available

Blood flow rate _____(mL/min) ☐ Not available
Dialysate flow rate ____(mL/min) ☐ Not available
Modality: ☐ MARS ☐ Single-pass albumin dialysis ☐ Not available
☐ Other Please specify: _____
Amount of albumin used (if known): _____ ☐ Not available

Other Extracorporeal Modality - Please describe briefly:
_____

Reason for ECT and Drugs/Toxins Treated

Please list up to five reasons (#1-#5) why ECT was started from the most important (#1) to least important (#5):

_____ Removal of drug/toxin
_____ AKI
_____ ESRD
_____ Metabolic acidosis
_____ Electrolyte imbalance
_____ Hemodynamic instability
_____ Respiratory failure
_____ Other:
Please specify: _____

Please provide electrolyte levels drawn before initial ECT:

Potassium: ☐ Known ☐ Not Available ☐ Not Performed
If known - K (mEq or mMol)_____
Calcium: ☐ Known ☐ Not Available ☐ Not Performed
If known - Ca (mg/dL)_____
Magnesium: ☐ Known ☐ Not Available ☐ Not Performed
If known - Mg (mg/dL) _____
Phosphate: ☐ Known ☐ Not Available ☐ Not Performed
If known - Phos (mg/dL)_____
Sodium: ☐ Known ☐ Not Available ☐ Not Performed
If Known Na (mg/dL) _____

Was ECT started for electrolyte imbalance?
☐ Yes ☐ No ☐ Unknown

What drugs/toxins were being treated with extracorporeal therapy? (list up to 5). Also include levels (including units) if available. Please indicate type of ECT used in round of treatment - HD, hemoperfusion, SLED, CRRT, PD, albumin, pheresis.

Treatment Round #1 (Initial, Peak, Pre-ECT, Initial Post-ECT, intra-ECT Levels):
Indicate Treatment Type: _____

	Agent	Initial Level	Units	Time since Presentation (Hrs)	Peak Level	Units	Time since Presentation (Hrs)
#1							
#2							
#3							
#4							
#5							

Extracorporeal Therapy (ECT) Sub Registry
Data Collection Form Version 1.0

	Agent	Pre-ECT Level*	Units	Time to ECT (Hrs)	Initial Post-ECT Level**	Units	Time since End ECT (Hrs)
#1							
#2							
#3							
#4							
#5							

	Agent	Levels During ECT*** [Enter up to 3 intra-ECT Measurements per Agent]								
		Level #1	Units	Time Tx (Min)	Level #2	Units	Time Tx (Min)	Level #3	Units	Time Tx (Min)
#1										
#2										
#3										
#4										
#5										

* Pre-ECT Interval: Time interval between lab drawn and when therapy started (in Hours)
** Initial Post ECT Interval: Time interval between when therapy stopped and lab drawn (in Hours)
*** ECT Therapy Level: Time interval into therapy when level drawn (in Minutes)

Treatment Round #2 (Pre-ECT, Post-ECT Levels):
Indicate Treatment Type: _____

	Agent	Pre-ECT Level*	Units	Time to ECT (Hrs)	Post-ECT Level**	Units	Time since End ECT (Hrs)
#1							
#2							
#3							
#4							
#5							

* Pre-ECT Interval: Time interval between lab drawn and when therapy started (in Hours)
** Post ECT Interval: Time interval between when therapy stopped and lab drawn (in Hours)

Treatment Round #3 (Pre-ECT, Post-ECT Levels):
Indicate Treatment Type: _____

	Agent	Pre-ECT Level*	Units	Time to ECT (Hrs)	Post-ECT Level**	Units	Time since End ECT (Hrs)
#1							
#2							
#3							
#4							
#5							

* Pre-ECT Interval: Time interval between lab drawn and when therapy started (in Hours)
** Post ECT Interval: Time interval between when therapy stopped and lab drawn (in Hours)

Please list any additional drug levels for any drug not listed above drawn before, during, or after extracorporeal therapy (even if the therapy was not intended to remove this drug): _____

_____

If the patient had more than one extracorporeal therapy, please state the order they were used in (for example, hemodialysis followed by CRRT):_____

_____

_____

Clinical Impact of ECT

Check the clinical signs that extracorporeal therapy affected within 6 hours of the completion of treatment, and for each clinical sign checked indicate the type of effect:

☐ None/Not applicable
☐ Mental status?
☐ Improved ☐ Worsened ☐ No change
Glasgow Coma Scale (if assessed) Pre-ECT ____ Post-ECT ____ ☐ Not Available
☐ Hemodynamics?
☐ Improved ☐ Worsened ☐ No change
Number of vasopressors at: Start of ECT_____ Post-ECT ____ ☐ Not Available
☐ Respiratory status?
☐ Improved ☐ Worsened ☐ No change
FiO2 on ventilator (if applies): Pre-ECT ____ Post-ECT ____ ☐ Not Available
Able to extubate within 6 hours of ECT? ☐ Yes ☐ No ☐ Unknown
☐ Lactic acidosis (not serum bicarbonate or anion gap, just serum lactate)?
☐ Improved ☐ Worsened ☐ No change
Serum lactate (mg/dL): Pre-ECT ____ Post-ECT ____ ☐ Not Available
☐ Other? Please specify: _____
☐ Improved ☐ Worsened ☐ No change

Did the patient have persistent signs or symptoms at discharge related to poisoning?
☐ Yes ☐ No ☐ Unknown
If yes, please describe briefly _____

Did the patient have AKI? ☐ Yes ☐ No ☐ Unknown
If yes, did AKI resolve by time of hospital discharge?
☐ Completely resolved ☐ Partially resolved ☐ Did not resolve ☐ Unknown

Was there a clinical complication due to extracorporeal therapy? ☐ Yes ☐ No ☐ Unknown
If yes, please describe below:
☐ Clinically significant bleeding during therapy
☐ Clinically significant bleeding after therapy that was related to therapy
(e.g., bleeding caused by thrombocytopenia or coagulopathy)
Please describe: _____
☐ Hypotension requiring early cessation of therapy
☐ Anaphylaxis, angioedema, or anaphylactoid reaction
☐ Vascular catheter complication: pneumothorax
☐ Vascular catheter complication: catheter-associated infection
☐ Vascular catheter complication: other
Please describe: _____
☐ Peritoneal infection
Did peritoneal catheter require removal? ☐ Yes ☐ No
☐ Severe electrolyte imbalance
Please describe: _____

☐ Hemolysis during therapy
☐ Cardiac arrest
☐ Other - Please describe: _____

Additional Required Information:

Please specify name(s) of treating toxicologist(s):

_____
_____
_____

Contact email address: _____

Case completed? ☐ Yes ☐ No