revised 7/00

Rotation: Clinical Toxicology
Orientation

Location: Central New York Poison Control Poison Control Center
S.U.N.Y., H.S.C. University Hospital at Syracuse
550 Genessee Street

Length: 1 month rotation

Faculty: Richard Cantor, M.D. Medical Director
Christine Stork, Pharm.D., ABAT Director
Poison Information Specialists

Goal: At the end of this rotation, the resident should have a comprehensive approach to the poisoned patient as defined by:

- Abilty to manage exposures when the specific toxin cannot be identified or when inadequate information is known regarding a specific toxin.
- Ability to appropriately evaluate and initiate therapy for a number of commonly presenting toxins.
- Ability to appropriately include toxins in the differential diagnosis of any patient.

Curriculum

1. Core curriculum and learning objectives

A. Initial approach to the poisoned patient

The resident should be able to:

1. Perform an adequate primary patient survey & stabilization
2. Obtain an appropriate history
3. Perform a physical examination noting specific properties relavent to toxic exposures.
4. Generate a differential diagnosis based upon findings in history and physical examination.

5. Design a reasonable management plan.

B. Gastrointestinal decontamination

The resident should be able to:

1. Provide a definition for the most common modes of gastrointestinal decontamination (syrup of ipecac, activated charcoal, multiple doses of activated charcoal (MDAC), whole bowel irrigation)

2. Choose the appropriate mode of gastrointestinal decontamination given a patient and to give advantages and disadvantages for each option

3. Be able to describe how to perform each gastrointestinal decontamination procedure and know the potential complications of each

C. Enhanced Elimination

The resident should be able to:

1. Provide a definition for the most common modes of enhanced elimination (forced diuresis, MDAC, ion trapping, hemodialysis, hemoperfusion, exchange transfusion, immunotherapy)

2. Choose the appropriate mode of enhanced elimination given a patient and a drugs characteristics

3. Compile the agents that are most commonly removed through forced diuresis, MDAC, ion trapping, hemodialysis, hemoperfusion, exchange transfusion, immunotherapy and the indications for each therapy.

D. The resident should be able to describe and identify the following toxidromes when presented with a patient:

1. anticholinergic
2. cholinergic
3. opioid
4. adrenergic
5. sedative hypnotic

*** The resident should be able to provide a differential diagnosis for each toxidrome and identify, rule out or treat the most lethal agent in each toxidrome class

E. The resident should be able to describe each of the following toxins in terms of epidemiology, clinical and laboratory presentation, confounding toxins and treatment: (the list of toxins is not all inclusive, rather it should serve as a guide, other toxins will be discussed when pertinent)

1. acetaminophen
2. aspirin
3. tricyclic antidepressants (all antidepressants)
4. theophylline
5. iron
6. methemoglobinemia
7. toxic alcohols
8. PO and IV hypoglycemic agents
9. digitalis like substances
10. beta adrenergic and calcium channel antagonists
11. all cardiac medications
12. toxic mushrooms
13. heavy metals
14. carbon monoxide
15. caustics
16. sedative hypnotics
17. rodenticides
18. hydrocarbons
19. lithium
20. hallucinogens
21. psychotropics
22. anticonvulsants
23. substance withdrawal
24. herbal preparations
25. mothball toxins
26. organophosphates
27. herbicides
28. cyanide
29. snake envenomations
30. drug interactions relevant to toxicology

F. The resident should develop a working knowledge of the poison control center, it's utility in the health care system and how to best utilize it.

G. The student should gain a knowledge of pharmacokinetics and be able to apply then to the overdosed patient in terms of absorption, distribution, metabolism and elimination

2. Application of learning objectives

A. Residents will be expected to participate in the following poison control center and emergency department activities during their month:

1. Morning review of night cases
2. Clinical Pharmacology and Toxicology Rounds
3. All ED conferences and others that are designated
4. All PCC case conferences and journal clubs

B. Resident responsibilities will include:

1. Call backs on designated cases (these cases become your responsibility to follow on with the guidance of faculty)

2. In person follow up on all University Hospital (and possibly those from other institutions)

3. Participation in daily discussion

4. Two to three projects on a topic related to toxicology

5. A 30 minute prepared case presentation

6. One day spent with the poison information specialists observing handling of home as well as hospital calls (part of this day will be spent with our health educator to gain information on community outreach and poison prevention)

7. Five call days per month and including two weekend days under the guidance of the attending on call.

8. One hour with the hyperbaric center.

3. Evaluation of learning objectives

A. Challenge Examination with written material and references	(35%)
B. Attendance at all required activities (Times are 7:30 AM to 4 PM most days)	(5%)
C. Appearance/attitude	(10%)
D. Completion of follow up cases that will be photocopied and handed in each day	(30%)
E. Case related evaluation at the completion of the rotation (see tool)	(20%)
TOTAL	(100%)

Clinical Toxicology Rotation

Orientation:

1. References:

    Text are maintained in the poison specialists office, you are encouraged to bring references of your own

    Poisondex and Drugdex are available through the poison specialists computers, please ask for help

    Searches can be completed at the University Hospital Library

2. Personal items:

    You can place your personal items in the poison specialists room, in the conference room or in the medical director's office if it is not occupied

    While you are working on cases or reading primary literature or texts, feel free to use the conference room or the medical director's office if it is not occupied

    The kitchen is free for your use, please clean up

3. Schedule:

    Day 1 - orientation/reading materials (start at 9 AM)
    Day 2 beginning of rotation
        8:00 AM Review of Night Cases
        8:30 AM - 12:00 PM call backs on cases / reading on cases/ see inpatients / primary literature review / work on projects
        1:00 PM - 3:00 PM case discussion (variable)
        3:00 PM - 4:00 PM Clinical Pharmacology/Toxicology Rounds further follow / current cases at university

    * 1 day with poison specialists and the health educator

    * 1 hour with the hyperbaric center (Mon 10-11 AM)

    * ED conference Wednesday AM and PM

    * ED Grand Rounds

* PCC case conference / journal club - thursdays

* Please report other meetings that are not listed

4. Daily responsibilities:

1. Call backs on active (these cases are the "sicker cases from the night before, do not write notes on the follow up sheets, only patient information and recommendations should be placed there)

- once you are ready to call back on a case (read about the toxin first), please run the case past the attending on call before calling back

-please make EVERY effort to follow cases, we realize it is not always easy, but very important

-a APAP level with time is required on every intentional overdose

2. In person follow up on all University Hospital inpatients (and possibly those from other institutions)

-please get all the follow up information, but run future recommendations by the attending on call before giving them

3. Participation in daily discussion

-this will be a discussion on the follow up cases, primary literature that impacts treatment may also be given to you

4. Two to three projects on a topic related to toxicology

-these should be small areas of toxicology that we DO NOT know about as yet. Feel free if there is a subject of interest, but as about you topic before doing it

5. A 30 minute presentation at ED Wednesday morning Case conference.

-The conference could be toxin or problem (i.e. seizure) focused. It will be given towards the end of the rotation (3 or 4th week) and should include audiovisual information along with a handout with references. Each conference should include a pertinent research related topic.

6. Five days on call, two of these days during the weekend.

-The attending on call will contact the resident for all pertinent active cases. The resident will then become the primary provider with continued attending guidance. All followup and recommendations should be reported to the poison information specialists immediately and appropriately documentated on the patient's chart as soon as possible.

5. One day spent with the poison information specialists observing handling of home as well as hospital calls. Part of this dayswill be spent with a health educator to gain information on community outreach and poison prevention

-on these days you will act as an observer only

3. Evaluation of learning objectives

Due dates will be set:

A. Oral project presentations with written material and references (2-3/rotation)

B. Attendance at all required activities (Times are 7:30 AM to 4 PM most days)

C. Appearance/attitude - please wear appropriate neat attire

D. Completion of follow up cases, please photocopy and hand in these in each day

Evaluation Tool for Residents Case Management

Resident Name:_____

Reviewer Name:_____

Date of Case:_____

Date of Review:_____

Toxin:_____

Please rate the following areas:
(1-poor, 2-minimal, 3-adequate, 4-good, 5-excellent, 0- NA)

Vital Signs _____

Tox History _____

Physical _____

Diagnostic Tests _____

Overall _____

Appropriate review by attending _____

Appropriate inital recommendations _____

Appropriate follow-up _____

Anything you would have changed in the management or documentation:
_____
_____
_____
_____