

American
Academy
of Clinical
Toxicology,
Inc.



Editor
Elizabeth Scharman, PharmD

Inside...

2
*Famous and Not So
Famous Events in
Toxicology*

3
*Academy Honors
Two with Fellowship
Status*

President's Corner

Donna Seger, MD

The EAPCCT celebrated their 40th Anniversary in Strasbourg during the annual meeting. It allowed a time to reflect on the collaborative efforts that brought our two organizations together. Presidents Vale and Krenzelok initiated the collaborative efforts with the writing of the Position Papers. With scientists from more than 60 countries involved, this collaboration increased the visibility and credibility of clinical toxicologists through out the world. Presidents Jaeger and Brent formalized our collaboration with a letter of agreement between the two organizations so that members would have equal rights in both societies. Evidence of the breadth of the organization is seen in the recipients of the Roche Award which acknowledges an individual's contribution to toxicology. The recipients have been members from Europe and North America and include Drs. Proudfoot, Vale, Krenzelok, Persson, Tenenbein, and Jaeger.

The new executives of the EAPCCT are: President – Nick Bateman; President Elect – Phillippe Hantson; Past-President – Jan Muelenbelt; Secretary/Treasurer – Alex Campbell. (Congratulations to President Bateman on the birth of his granddaughter!)

You will soon be receiving the ballots for election of officers. Candidates for the Board of Trustees are chosen from members who have been involved in the Academy. If you are interested in running for the Board, start with participation on a committee. There are many committees, some more active than others. Let the chair of the committee, and President Elect McGuigan, know that you are interested in being on the committee.

Committee Chairs and committee membership changes with the election of the President and are Presidential-appointees.

If you have not already registered for the NACCT, do so as soon as possible. You can register on the AACT website. The meeting is better than ever, this year. Attendance at the premeeting symposia continues to increase. Keynote speakers, platform presentations, and posters educate us and keep us on the cutting edge. Recently initiated, the Year-in-Toxicology symposium addresses the latest-breaking toxicology issues. The ever-popular Quiz Bowl, Historical Society events, and the AACT Acute/Intensive Care Symposium will educate and entertain. And don't forget the Mystery Dinner-you may be surprised at what some of your colleagues have done.

This is the last AACTion during my presidency. The last four years have been invaluable as a learning experience, a venue to meet people, and an opportunity to meet new friends and visit old friends. It has been an honor to be involved with this organization and the people who make the organization what it is. I look forward to continuing service to the Academy as Past-President.



Dr. Seger

New Ownership of *Journal of Toxicology — Clinical Toxicology*

Michael McGuigan, MD, MBA, Editor-in-Chief, *Journal of Toxicology — Clinical Toxicology*

The *Journal of Toxicology — Clinical Toxicology*, born in 1968, has been published since its inception by Marcel Dekker Inc. This year, Marcel Dekker Inc. was bought by Taylor & Francis.

Building on two centuries of experience, Taylor & Francis (T & F) has grown rapidly over the last two decades to become a leading international academic publisher. With offices in London, Brighton, Basingstoke and Abingdon in the UK, New York and Philadelphia in the USA, and Singapore and Sydney in the Pacific Rim, the Taylor & Francis Group publishes more than 1000 journals and around 1,800 new books each year, with a books backlist in excess of 20,000 specialist titles.

Taylor & Francis Group are providers of quality information and knowledge that enable our customers to perform their jobs efficiently, continue their education, and help contribute to the advancement of their chosen markets. Our customers are researchers, students, academics, and increasingly professionals.

Taylor & Francis Group PLC has merged with Informa Group PLC to form T&F Informa PLC (www.tfinforma.com), a new international force in the provision of specialist information through publishing and business events.

Taylor and Francis is pleased to have the *Journal of Toxicology — Clinical Toxicology* as one of its scientific journals. Although the *Journal* has been promised a seamless transition, there are likely to be minor glitches and bumps as the new publishing team learns the ins and outs of publishing the *Journal*. In the long run, the transition will be a good one for the *Journal* and for its two sponsors — the AACT and the EAPCCT.

Famous [and Not So Famous] Events in Toxicologic History

Timothy Erickson, MD, FACEP, FACMT

Charcoal: Universal Antidote or Black Magic?

Welcome to the second article in AACTion's new Toxicology History Series. The Publication Committee hopes that members will enjoy this new addition to the newsletter.

A recent article in the *Journal of Toxicology Clinical Toxicology* by Dr. Seger encouraged us to “back up and reassess” as we contemplate the role of single dose activated charcoal in poisoning. But how far back should we go? The article reminded me that we rarely acknowledge those toxicologists who practiced long before us. Our predecessors had abundant natural toxins, but far fewer pharmaceutical agents. Additionally, there were no stringent IRB committees, and most trials (some rather barbaric) were conducted on those less fortunate. Nonetheless, what remains the same today, as with yester year, is the fact toxicologists often use themselves as their own subjects and controls when studying the effects of charcoal.

Although medicinal use of charcoal dates back to the times of Hippocrates, it was only in the latter part of the 18th century that its adsorbent properties for poisons were appreciated. The earliest reference to therapeutic uses of a wood charcoal is found on Egyptian Papyrus dating back to 1500 BC. In this period, charcoal was used to treat anthrax, vertigo, and epilepsy. Beginning in the 5th century B.C. an agent called *terra sigillata* was touted as the “universal antidote”. This agent was referred as the “sacred sealed earth”. It was a dark red clay obtained from a special hill on the Greek island of Lemnos (sounds like a nice site for our next toxicology meeting). Supporters of the sacred clay claimed it would counteract all types of poisons. Once a year, with much pomp and circumstance, the clay was ceremoniously removed from the hill. It then mixed with goat's blood to make a fine paste. This clay was used all over Europe as an antidote until the 15th century. Later analysis during the Renaissance period revealed that the paste contained iron, magnesium, aluminum, and silicates.

The ancient universal antidote *Theriac* (Greek, for wild beast) was created by Mithridates VI, King of Pontus. Mithridates took particular interest in the field of toxicology because he always lived in great fear of being poisoned. In the first century AD, Nero's personal physician, Andromachus, improved the original formula by adding “flesh of vipers” to remedy snakebite, and increased the proportion of opium. It became known as the Theriac of Andromachus and contained 64 other ingredients including minerals, herbals, poisons, animal flesh and blood, all mixed with honey. Later it became a cure-all medicine which was touted to be the panacea against all diseases. In more recent times, a newer version of the universal antidote was composed of pulverized wood charcoal (or burned toast), with one part milk of magnesia, and one part strong tea. Theoretically, if the poison was metallic or an alkaline, the tannic acid contained in the tea would neutralize it. If the poison was an acid, the magnesia would counteract it.

Acting as his own subject, French chemist, M. Bertrand, 1813 first demonstrated charcoal's efficacy in arsenic poisoning by surviving after ingesting 5 gm of arsenic trioxide mixed with charcoal. Over the next few years, other less fortunate investigators had difficulties confirming Bertrand's findings, possibly due to the differences in the charcoal preparation employed. In 1831, PF Tourey, a pharmacist of Montpellier, demonstrated charcoal's effect on strychnine. Legend has it that he ingested 10 times the lethal dose of strychnine mixed with 15 gm of charcoal in front of the French Academy of Medicine. Although he survived this brave demonstration, the Academy was not convinced. Tourey was “booted” off the stage the following day.

In 1846, Garrod the elder of Aldersgate Medical School in England, conducted the first controlled trial investigating charcoal's efficacy with several poisons on a variety of animals including: dogs, cats, guinea pigs, rabbits and frogs. His poison of choice was strychnine, but other studies also included opium, aconite, hemlock, belladonna, stramonium, silver nitrate, and mercury. Garrod employed an animal charcoal preparation called “ivory black” from which minerals were

extracted by treatment with acid. He was also the first to advocate early post-ingestion charcoal administration, as well as defining a proper charcoal: poison ratio. Similar observations were made in England by Graham and Hoffmann who added lethal quantities of strychnine to pale ale which was treated with charcoal. After the charcoal was filtered off, the pale ale which was found to be palatable, and the strychnine was recovered quantitatively from the charcoal.

On our side of the Atlantic, American physician Hort successfully treated a mercury bichloride poisoned patient with a powdered charcoal in 1834. Initial charcoal administration was administered 44 hours after ingestion, “which afforded great relief”. In 1848, physician B. Howard Rand of Philadelphia followed up Gerrod's studies and was the first to study charcoal's efficacy in humans — including himself.

At the beginning of the 20th century, Russian toxicologist Ostrejko demonstrated that super heating charcoal with steam increased its adsorptive power. Despite these pioneering studies, charcoal was not used again clinically until 1960 when re-popularized by pediatricians Holt and Holz: “In our opinion charcoal should be restored to the pharmacopoeia, not as a remedy for flatulence or intestinal intoxication, but as an emergency antidote for poisons. A bottle on every medicine shelf would go a long way to combat serious poisonings in the home. The charcoal should be stored in a bottle — not a can or carton — but a *black bottle* to catch the eye.”

New variations of charcoal therapy have developed over the last two decades including multi-dose therapy, charcoal hemoperfusion, and new “superactive” charcoal preparations. As we attempt in one generation to change our charcoal administration practices, let us remember it has taken centuries to discover the benefits and short comings of this ageless, universal antidote.

Sources:

Anderson H: Experimental studies on the pharmacology of activated charcoal. *Acta Pharmacol* 1946; 2:69-78.

Cooney DO: *Activated Charcoal in Medicinal Applications*. New York, Marcel Dekker, 1995.

Garrod AB: On purified animal charcoal as an antidote to all vegetable and some mineral poisons. *Tr M Soc London*. 1:195, 1846.

Garrod AB: On the influence of liquor potass and other alkalies on the therapeutic properties of henbane, belladonna, and stramonium. *Med Times Gaz* 36(15): 589-90, 1857.

Graham T, Hoffmann AW: Report upon the alleged adulteration of pale ales by strychnine. *J Chem Soc* 5: 173, 1853.

Greensher J, Mofenson HC, Caraccio TR: Ascendency of the black bottle (activated charcoal). *Pediatrics* 1987; 80:949-50.

Holt LE, Holz PH: The black bottle: A consideration of the role of charcoal in the treatment of poisoning in children. *J Pediatr* 1963; 63: 306-314.

Hort WP: Case of poisoning with corrosive sublimate, in which the administration of charcoal afforded great relief. *Am J Med Sci* 6: 540-541, 1834.

Katona BG, Siegel EG, Cluxton RJ: The new black magic: activated charcoal and new therapeutic uses. *J Emerg Med* 5(1): 9-18, 1987.

Parojcic D, Stupar D, Mirica M: Theriac: medicine and antidote. *Vesalium* 9(1): 28-32, 2003.

Picchioni AL, Chin L, Verhulst HL, et al: Activated charcoal -vs- universal antidote as an antidote for poisons. *Toxicol Appl Pharmacol* 8(3):447-54, 1966.

Rand BH: On animal charcoal as an antidote. *M Examiner*, 4:528, 1848.

Seger D: Single-dose activated charcoal: back up and reassess. *J Toxicol Clin Toxicol* 42 (1): 101-110, 2004.

Thompson CJ: *Poison and Poisoners*. London, Harold Shaylor, 1931.

Wax P: *Historical Principles and Perspectives: In Goldfrank's Toxicologic Emergencies*. Goldfrank LR, Floenbaum, Lewin et al (eds) McGraw-Hill, New York, 7th Ed pp 1-17, 2002.

Academy Honors Two with Fellowship Status

Ted Tong, Pharm.D., DABT

Two active members of the AACT will be recognized during the 2004 NACCT Annual Meeting for their professional achievements and contributions of exemplary service to the organization with the designation of AACT Fellow. Honored in Seattle will be **Daniel J. Cobaugh, PharmD**, Washington, DC; and **Timothy B. Erickson, MD**, Chicago, Illinois at a reception to celebrate the occasion with other Fellows and colleagues.

Daniel J. Cobaugh, PharmD, is director of research for the American Society of Health-System Pharmacists (ASHP) Research and Education Foundation. A member of the AACT since 1989, his contributions to the Academy include more than 30 poster and podium presentations given during NACCT, a perennial abstract reviewer, and service on many Academy committees. He is currently chair of the AACT Research Awards Committee, a member of the Education Committee, and has served on the Planning Committee for the 1994 NACCT Meeting. A diplomate of the American Board of Applied Toxicology (ABAT) since 1992, Dan serves on its Board of Directors and was responsible for organizing the ABAT Symposia in 2003 and 2004. A multitude of peer-reviewed publications, book chapters, and invited international presentations on research projects in-progress are testimonials to his scholarly accomplishments and reputation for excellence he has earned. His recommendations praise him highly for his many significant and positive contributions which promote and advance the Academy's interests.

Timothy B. Erickson, MD, is associate professor, Department of Emergency Medicine, University of Illinois College of Medicine, residency director, program in emergency medicine, University of Illinois Medical Center and director, Division of Clinical Toxicology, University of Illinois Hospital. A member of the AACT since 1989, he is currently serving his second term as an elected member of the Academy's Board of Trustees. His AACT Committee service include: Membership, and Multi-center Research. His longstanding and active involvement with the NACCT is noteworthy; he has organized symposia and presented many abstracts and original research work during these annual forums. He has presented historical papers, chaired sessions, and planned events for the Annual Meeting. He has more than fifty original research publications and is internationally recognized for his expertise as evidenced by the number of invited presentations he has given worldwide — including France, Israel, Taiwan, Russia, Kosovo, Mexico, and Cuba. Dr. Erickson is a diplomate of the American Board of Emergency Medicine and the American Board of Medical Toxicology.

In the "Benefits of Membership" of the AACT Membership Information Web site (<http://www.clintox.org/membership.html>) the criteria for AACT Fellowship Status is briefly mentioned. "AACT members who have been active members for at least seven years and have demonstrated significant contributions to the organization (AACT, ABAT) and the discipline of clinical toxicology are eligible for recognition as a Fellow of the AACT. Fellows are selected through a peer review process."

During 2004, the review of nominees' profiles was conducted by a committee appointed by AACT President Donna Seger. This committee included Donald Barceloux, MD, FAACT, Anthony Manoguerra, PharmD., FAACT, Elizabeth Scharman, PharmD, FAACT, Frank Walter, MD, FACCT and chaired by Ted Tong, PharmD., FACCT. Only those applications providing complete and comprehensive profile of the nominee were reviewed.

Applicants for the 2005 AACT Fellowship must submit an application with all sections completed. Applications can be obtained from: Theodore G. Tong, Pharm.D., at the Arizona Poison and Drug Information Center, 1703 East Mabel Street, #344; Tucson, AZ 85721; e-mail: tong@pharmacy.arizona.edu. Phone: (520) 626-1587. *The ability to download an application form subsequently off of the AACT Web site is currently still in the construction stage.*

The deadline for submission of names of nominees and all application materials (refer below) including letters of support is **January 12, 2005** in order to be considered for the induction ceremony at the 2005 NACCT Annual Meeting.

Incomplete application materials will not be examined by the review committee and will not be returned to neither nominee or nominator.

The application form includes requests for details on [1] AACT service such as committee assignments, Board of Trustee service; dates of attendance and contributions to NACCT; contributions to AACT publications; [2] practice type, location, dates, percentage of time devoted to activity; [3] positions and practice responsibilities related to clinical toxicology in business, governmental or regulatory; [4] dates and duration of board certifications; [5] date, type and location of academic appointments; [6] publications authored used in the teaching of clinical toxicology; [7] research and publication dossier; [8] public service; [9] appointments to centers, committees and organizations. Included in the application must be the name of three AACT members — one serving as the nominator and the others provider of supporting letters — who will verify the nominees' contributions to the field of clinical toxicology and service to AACT.

AACT Fellowship status is a high honor bestowed by peers upon an individual who is a member of the Academy based on the meritorious contributions of his or her work that involve the discipline and for exemplary service to the Academy. The highlight for many so honored with this distinction is the annual gathering at the annual meeting of the Academy where newly recognized Fellows of the Academy are celebrated for their successes and efforts. Please seriously consider and place in nomination those members of the Academy whom you feel meet the criteria for designation as an AACT Fellow. Self nomination is accepted for review if accompanied by three (3) letters of recommendation, support and verification.

AACTion

is published by the American Academy of Clinical Toxicology, Inc. exclusively for the use of its members. Articles may not be reproduced without verbal permission from the Editor and/or Executive Director.

AACT Administrative Office
777 East Park Drive, PO Box 8820
Harrisburg, PA 17105-8820
(717) 558-7847 (phone)
(717) 558-7841 (fax)
aact@pamedsoc.org
www.clintox.org

Executive Director
Jan Reisinger
jreisinger@pamedsoc.org
Administrative Secretary
Martha Souders
msouders@pamedsoc.org

Copyright 2004
American Academy of Clinical Toxicology, Inc.

Board of Trustees

President
Donna Seger, MD

President-Elect
Michael A. McGuigan, MD

Immediate Past President
Milton Tenenbein, MD

Secretary-Treasurer
Gregory G. Gaar, MD

Trustees
G. Randall Bond, MD
Jeffery Burgess, MD
Timothy Erickson, MD
Michael Greenberg, MD, MPH
Anthony Manoguerra, PharmD
James B. Mowry, PharmD
Scott D. Phillips, MD
Anthony J. Scalzo, MD
Elizabeth Scharman PharmD
Christine M. Stork, PharmD
Rebecca Tominack, MD