News & Announcements

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President's Corner

Michael I. Greenberg, MD, MPH, FAACT

Trying to Make a Difference

I have some rather strong feelings about something that essentially only affects our physician members; so to the majority of the AACT constituency, please forgive the following rant. Next month I promise I will get back to business that affects all of us, not just the physicians. That being said…

I took my ABMS Medical Toxicology recertification exam recently. I am happy to report some really good news as follows: 1- I passed!!! 2- it only took me a week after the exam was over to start taking solid food again!

The bad news: this examination persists in perpetuating some really disappointing paradigms; some things that in the coming years we simply MUST get away from. First: the exam, in my humble opinion, is largely irrelevant to the actual practice of medical toxicology as anyone knows it. This is not just my simple-minded take on the exam, but numerous other examinees who also took the test voiced similar concerns about the lack of relevance. In fact, the Board must realize that this is indeed a valid concern, since the post-exam survey included a question about the relevance of the examination to the test taker's practice. Second: I am sad to report that the exam seems to have a bit of a punitive edge to it, expecting examinees to know trivia that transcends trivia itself. Again, not my own brilliant take on the exam, but one that is shared by every examinee I spoke to after the test. In fact, many colleagues who took the re-certification exam during the last cycle two years ago echoed this same sentiment. Third: for a test that cost me nearly $1700 in fees I think I have the right to expect that the images I am tested on be clear, sharp and classic in content; an easy task in the 2008/2009 era of advanced computer capabilities. Instead, many of the images continue to be vague, of poor quality and often difficult to identify, if not downright pixilated. I think the exam was summed up by a text message I received from one of my former Fellows immediately after the test ended: "What was THAT??" was all he said. I understood exactly what he meant, and I think many who just sat for that exam understand as well.

Now, most people are either too busy (or intimidated) to complain about the exam or are just so darn grateful they passed they have already forgotten the pain of the exam as well as the befuddlement of trying to prepare for it. Luckily I have a bit of a "bully pulpit" here as your President, so I have a medium in which I can bring this issue into the light of day. Also, I just may be of an age (or I will be in ten more years) when I may not be interested in re-certifying yet again. So this is my attempt at creating a legacy to help those younger, future medical toxicologists, who will be subjected to this torture if no one speaks out. So……I'm safe (I hope) and sort of angry about the fact that we seem to be perpetuating a fraternity hazing-type mentality: "I went through this, so you need to go through it", as far as this examination is concerned. This approach is unenlightened and it needs to change.

So what is the answer? I don't wish to criticize those dedicated individuals who spend inordinate amounts of time writing the exam and doing their best to create a good test; we all know how difficult that can be. Nor do I wish to "take on" the Boards (Preventive Medicine, Pediatrics, and Emergency Medicine) who are trying to provide the best vehicle possible to help verify competency and reassure the public and the medical community that only competent examinees are credentialed.

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Editor

Michael G. Holland, MD

Inside…

AACT & ACMT Collaborate on Medical Toxicology LLSA at NACCT 2009

Alan Woolf, MD, FAACT

Leaders of AACT and ACMT will collaborate on a new educational initiative responsive to the American Board of Emergency Medicine (ABEM) Medical Toxicology Sub-Board's requirements for life long learning among board-certified physicians.

The new venture will include a workshop whose learning goal is to review the 12 published articles selected by the Sub-Board. A copy of the reading list is available at www.abem.org. The articles are selected every two years from the Core Content of Medical Toxicology. The workshop will prepare participants to take ABEM's on-line electronic Life Long Learning Self-Assessment (LLSA) test, which will be available in June, 2009.

The 2.5-hour symposium will be offered at the ACMT Spring meeting in Puerto Rico and then again at the NACCT 09 meeting in San Antonio, Texas. The session will be facilitated by two board-certified medical toxicologists, and it will be open to all attendees of NACCT, not just those physicians preparing for the exam. Learning points in each paper will be discussed in detail and participants will have the opportunity at the San Antonio meeting to participate in the administration of the electronic examination in a group format. Since the life-long learning process reviews 12 new articles every two years, both ACMT and AACT have plans to continue this collaboration of educational presentations in future meetings as a service to their physician members.

New Trainee Research Forum Opportunity Planned For NACCT 2009 in San Antonio

Kennon Heard, MD

The American Academy of Clinical Toxicology is pleased to announce a new forum exclusively for the presentation of research in which trainees (eg, doctoral pharmacist residents and fellows, pharmacology, PhD candidates, physician medical toxicology fellows, postgraduate master's or doctoral degree nursing candidates) have played a key role. This research session, the **Trainee Research Symposium**, will be held in a platform format and will debut at NACCT 2009 in San Antonio, Texas.

The trainee must be the first author of the research abstract submitted for this special session and must be the presenter. Case reports will not be considered. Each 10-minute presentation will then be critiqued, first by the trainee's mentor (whenever possible). Then the abstract will be open for audience participation. Only completed research, which has data summarized and discussed in the abstract, will be considered. The session is not intended to present "works in progress" concepts or research designs that have not yet collected data.

While the abstracts will not be published, trainees will obtain experience in presenting before a national audience, receive invaluable feedback on their work, and can cite the presentation as a scholarly work.

Dr. Kennon Heard at the Rocky Mountain Poison and Drug Center is the organizer for the session. He will be soliciting submission of abstracts from trainees as well as residency and fellowship training directors, with a tentative abstract receipt deadline of June 30th, 2009. Abstracts by trainees that were not accepted by the usual NACCT abstract submission process are eligible and invited for this second submission as are abstracts of 'late breaking' completed research not previously submitted. Only a limited number of abstracts will be accepted through a competitive peer review process. Acceptance of an abstract to this session does not preclude its presentation at a future NACCT meeting, as long as the research remains unpublished.

Interested AACT members should contact Dr. Heard at kennon.heard@rmpdc.org for details of this exciting new educational venture.

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AACT to Sponsor MRO Course at NACCT in San Antonio

Michael G. Holland, MD, FAACT

The American Academy of Clinical Toxicology will sponsor a two-day Medical Review Officer's (MRO) training course on September 26 & 27, 2009. The course will begin on the final day of NACCT, just after the last symposium concludes, and will continue the following day. Participants will be eligible for 12 hours of CME, and the course will fulfill the US Department of Transportation's (DOT) training requirements that will enable physician's attending the course to take a qualifying exam to become certified as an MRO.

The DOT requires that all safety-sensitive employees in the transportation industry be enrolled in mandatory breath alcohol and urine drug screening programs. The drug screens are required for pre-employment, post-accident, random, return to duty, and for reasonable suspicion. Drug screen results are required to be reviewed by a certified MRO to investigate whether there is a valid medical explanation for the drug test result. The DOT requires that an MRO be a licensed physician who is familiar with the regulations, has received at least 12 CME hours of specialized training in the MRO functions, and has passed a certifying exam. This course will fulfill the training requirements that then allow participating physicians to take the certifying exam offered by either AAMRO or MROCC (on-line or take-home exams available for a separate fee).

The DOT has been requiring testing since a train accident in Chase, MD in 1987 killed 16 people and injured many others. NTSB investigation revealed that the engineer had disabled warning signals and had ignored warning lights, which caused that crash. The brakeman and engineer later admitted to smoking marijuana while on duty. Public and Governmental outrage led to rapid initiation of the federal drug testing program.

Employees covered by these requirements include employees in six industries regulated by the DOT: The Federal Aviation Administration (FAA); Federal Transit Administration (FTA); The Federal Railroad Administration (FRA); The Federal Motor Carrier Safety Administration (FMCSA; formerly FHWA); The US Coast Guard (USCG- now under Homeland Security but drug screening is still regulated by DOT); and The Research and Special Projects Administration (RSPA- the pipeline industry). By far the largest group is the FMCSA, covering in excess of 11 million employees (in contrast, all the other agencies together amass only one tenth of the number of FMCSA-covered employees) (this is the primary reason most DOT testing programs refer to "truck drivers").

However, MRO duties are not restricted to the federally-regulated testing programs. Most MROs find that regulated testing accounts for only about 10% of their practice. Non-regulated testing involves the same types of testing as DOT (pre-employm., post- accident, reasonable suspicion, etc), but for the private sector. As many of us who are employed by medical centers already know, many hospitals have begun performing pre-placement urine drug screening on new employees. Those involved in Occupational Medicine know that most major employers have been performing drug testing for many years. While not required by federal statute, virtually all of these non-regulated drug-testing programs use the services of an MRO, and require that the MRO be certified as defined by the federal programs. A few states even *require* it for non-regulated testing that occurs within their jurisdiction.

While non-physicians are not eligible to become certified as an MRO, many have taken these courses to learn about the process, and many work in offices where they provide assistance to industry and to MROs. Join us at NACCT 2009 for the MRO course.

Archives of the Drug Information Service at Upstate Poison Center; SUNY Upstate Medical University; Syracuse, NY

Jamie Nelsen, PharmD, DABAT

Question: Are pediatric patients more susceptible to hepatotoxicity secondary to valproate-induced carnitine deficiency?

Carnitine

Carnitine is an amino acid necessary for the transport of long chain fatty acyl coenzyme-A (CoA) esters into myocyte cells.[1] Once inside the cell, CoA is oxidized in the mitochondria to provide energy.[1] While 75% of carnitine in a healthy individual comes from the diet, 25% is synthesized endogenously in the liver from methionine and lysine, a process that requires the enzyme gamma-butyrobetaine hydroxylase.[2] Children under the age of two have a relative enzyme deficiency and therefore may be predisposed to carnitine deficiency in the presence of valproate,[2] particularly in the presence of poor nutritional status.

Valproate-Induced Carnitine Deficiency

Valproate is primarily metabolized via glucuronidation and beta- and omega-oxidation. Beta-oxidation occurs inside the mitochondria and requires L-carnitine for intracellular transport, and therefore is essential for valproate metabolism.

Several mechanisms by which valproate may cause carnitine deficiency have been proposed including: 1) depletion of carnitine and acylcarnitine by both valproate and its metabolites 2) reduction of renal tubular free and acylcarnitine reabsorption, 3) reduced endogenous carnitine synthesis via blockade of butyrobetaine hydroxylase by valproate, 4) and inhibition of the membrane carnitine transporter by valproylcarnitine, thereby decreasing the transport of extracellular carnitine into the cell and the mitochondria.[4,5,6]

Numerous case reports have observed that age less than two years, having neurological handicaps, and receiving multi-antiepileptic drug therapy are risk factors for clinically important valproate-related carnitine deficiency.[2,6] Because of these identifiable risk factors, routinely measuring carnitine levels in all children on chronic valproate therapy is not warranted. In a cross-sectional study involving 43 children ages 0.9 years to 18.7 years on valproate therapy, only 2 were identified as having low carnitine levels.[7] The investigators found no independent association between age, body mass index, feeding problems, polytherapy, or concurrent disabilities and carnitine deficiency, suggesting that routine testing of carnitine levels is unnecessary.

Valproate-Induced Hepatotoxicity

Reports of severe valproate-induced hepatotoxicity following acute overdose are rare.[12] Idiopathic fatal hepatotoxicity secondary to valproate occurs in approximately 1 out of 50,000 adults, compared to 1 out of 800 children < 2 years old, and is more typically observed during the first six months of therapy.[2,4] The mechanism of this reaction is not fully understood, but may include the development of hypocarnitinaemia resulting in the formation and intracellular accumulation of reactive metabolites and subsequent oxidative stress.[8] Whether or not oxidative stress is the predominant factor in the development of hepatotoxicity is unknown. However, oxidative stress has been shown to occur in both rats and humans exposed to valproate at therapeutic doses, and therefore is likely a contributing factor.[8]

The development of microvesicular steatosis has been linked to decreased beta-oxidation of fatty acids. In patients on valproate therapy, steatosis has been shown to precede permanent necrotic damage, and can be monitored through levels of aminotransferases, although these changes are usually minor.[4,8]

Carnitine Therapy

L-carnitine therapy is intended to decrease oxidative injury by accepting toxic short-chain fatty acids and restoring beta-oxidation function in the mitochondria of the liver.[2] Despite multiple case reports attesting to its success, there is a lack of controlled studies confirming this postulated benefit. Nevertheless, consensus guidelines have recommend carnitine therapy in pediatric patients who develop valproate-induced hepatotoxicity, or who are known to have overdosed on valproate.[9] A retrospective cohort study of 92 pediatric patients with severe, acute valproate-induced hepatotoxicity reported a 48% survival rate in patients treated with l-carnitine versus 10% of those managed with aggressive supportive care alone.[10] The dose advised for acute management varies and has varied from 50-500 mg/kg/day. A reasonable starting dose may be 100 mg/kg IV (up to 6 grams) administered over 30 minutes as a loading dose, followed by 15 mg/kg every 4 hours administered over 10-30 minutes.[12] In addition to life-threatening hepatotoxicity, carnitine supplementation is

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AACT Toxicology Question of the Day Translated into Spanish by AACT Member

Profile of Javier Waksman, MD, DABT, FACMT

Long-time AACT member Javier C. Waksman, MD has undertaken a daily role of enhancing worldwide toxicology education. Dr. Waksman has been translating the popular new feature "AACT Toxicology Question of the Day" into Spanish on a daily basis. He started performing this service approximately 4 months ago, soon after the Toxicology Question of the Day became a daily benefit of AACT membership.

Javier was born in Argentina and therefore is fluent in Spanish; he frequently lectures in South America on toxicology topics. His expertise in toxicology and his bilingual abilities played a critically important role during the diethylene glycol (DEG) poisoning epidemic in Panama in 2006, as well as the methanol poisoning episode in Nicaragua in that same year. Javier was able to establish diagnostic and treatment protocols and to procure the antidote fomepizole and have it delivered to Nicaragua and Panama to treat patients who were poisoned by these toxic alcohols. The methanol had tainted home made liquor; the DEG had been a contaminant of the pharmaceutical diluent used in cough syrups produced by the National Medical Program in Panama.

Dr. Waksman's latest project takes him approximately 10 minutes each day to translate the Toxicology Question of the Day into Spanish, and then he sends it to interested members via the Latin American Toxicology Network list serve. It has been well received and much appreciated by our Latin American toxicology colleagues.

Dr. Waksman is an Assistant Professor of Medicine at the University of Colorado- Denver. He is a Medical Toxicologist, having completed his Fellowship at the Rocky Mountain Poison and Drug Center in 2001.

The Academy is very proud of members like Dr. Waksman who have volunteered their services and expertise to help others. AACT thanks Dr. Waksman for his dedicated service.

Below is a reprint of a recent Toxicology Question and its Spanish translation.

Question:

True or false, pediatric ingestions of clonidine commonly results in delayed (>6 hours) toxicity?

Scroll down for the answer.

Answer: False. In one series of clonidine ingestions in 113 children under twelve, onset of full clinical effects was complete within 4 hours in all cases. In addition, in the 61 children who ingested less than 0.3 mg, none had coma, respiratory depression or hypotension. Spiller, H. A., W. Klein-Schwartz, et al. (2005). "Toxic clonidine ingestion in children." J Pediatr

La pregunta de toxicología del día de la AATC (Academia Americana de Toxicología Clinica). 23/12/08
¿ Habitualmente, las ingestiones pediátricas de clonidina producen toxicidad retardada (> 6 horas)?. Verdadero o falso. Ver respuesta abajo.

Respuesta: Falso. En una serie de ingestiones de clonidina en 113 niños menores de doce años, la aparición de efectos clínicos fue completa en 4 horas en todos los casos. Además, en los 61 niños que ingirieron menos de 0,3 mg, ninguno tuvo un coma, depresión respiratoria o hipotensión. Spiller, H. A., W. Klein-Schwartz, et al. (2005). "Toxic clonidine ingestion in children." J Pediatr 146(2): 263-6.(Abstract)

Save the Date: The 2009 NACCT Meeting in San Antonio, TX will be held September 21- 26. A post-symposium MRO course on September 26 & 27, 2009 immediately follows NACCT 2009, and will satisfy the US DOT pre-requisites for certification as an MRO for workplace drug testing reviews.

President's Message

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Here's an idea: let's demand that the American Board of Emergency Medicine (ABEM) publish the results of that post-test survey! This could contain important information regarding the exam's relevance to the actual practice of those who recently took the exam. As mentioned above, at least one question on that survey goes to the heart of the problem: "Is this test relevant to your practice as a medical toxicologist?" If the majority of those who took the test respond in the negative, it is clear that the test, its content and its goals need to be re-evaluated. If you agree that the results of this survey should be published send me an e-mail (mgreenbe@drexelmed.edu). I will bundle all the e-mails I receive on the topic, add my own very respectful cover letter, and will forward the package to ABEM for their consideration. Who knows…maybe it will make a difference.

Drug Information Question

Continued from page 4

strongly recommended in patients who have known carnitine deficiency syndromes, and in children at high risk for valproate-induced carnitine deficiency or valproate-induced hepatotoxicity.[9]

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Upcoming Meetings

NACCT 2009
September 21-26
San Antonio, Texas
www.clintox.org

XXIX International Congress of the European Association of Poisons Centres and Clinical Toxicologists
May 12-15, 2009
Stockholm, Sweden
www.eapcct.org/show.php?page=congress

AAPCC 2009 Mid-Year Directors Meeting
February 24/25, 2009
Albuquerque, New Mexico
http://www.aapcc.org

ACMT Spring Meeting
March 27/28, 2009
San Juan, Puerto Rico
http://www.acmt.net

Preventive Medicine 2009
February 11-14, 2009
Los Angeles, CA
www.preventivemedicine2009.org/

Society of Toxicology (SOT) Annual meeting
March 15-19, 2009
Baltimore, MD
www.toxicology.org/ai/meet/am2009/

American Occupational Health Conference
ACOEM Annual Scientific Meeting
April 26-29, 2009
San Diego, Ca
www.acoem.org/conferences.aspx