TOX TALK

Society of Forensic Toxicologists, Inc.

1013 THREE MILE DRIVE • GROSSE POINTE PARK • MICHIGAN 48230-1412

VOLUME 16, No. 1 MARCH 1992

PRESIDENT'S MESSAGE . . . . . JEANNE M. BENO, PH.D.

1992 promises to be a challenging year for S.O.F.T. as our organization plays an increasingly prominent role in promoting the profession of forensic toxicology. This is exemplified by the work of the Guidelines Committee which, having completed and published the "Forensic Toxicology Laboratory Guidelines", has embarked on the difficult task of developing a voluntary accreditation program for forensic tox laboratories.

As you look over the list of committee chairs for 1992, you will see three new committees. The Advisory Committee on Hair Analysis is charged with assessing advances in the area of hair analysis and reporting their recommendation on continued endorsement of the "Consensus Opinion on the Applicability of Hair Analysis to Testing for Drugs of Abuse" to the membership. The Continuing Education Committee is exploring the development of short courses or workshops on topics such as G.C., M.S., or Separation Technology that are specifically tailored to the use of these technologies in the practice of Forensic Toxicology. The Compensation Review Committee is to review the possibility of providing some financial assistance to S.O.F.T. Officers to defray expenses incurred during their tenure.

Finally, I am in the process of establishing an ad hoc committee on educational and professional opportunities in the field of forensic toxicology. This committee would serve as an information resource for high school or college students interested in a career in forensic tox who are not sure about how to pursue that career. Anyone interested in serving on this committee should contact me.

SOCIETY OF FORENSIC TOXICOLOGISTS 1992 ANNUAL MEETING OCTOBER 12 - 17, 1992

THE RADISSON HOTEL, CROMWELL, CT. ---- *SCIENTIFIC MEETINGS, WORKSHOPS STIMULATING DISCUSSIONS AND MORE!!!!* **---- CONTACT: C NEAL READING, Ph.D., P.O. BOX 1689, HARTFORD CT. 06144 (TELEPHONE: 203-566-4258)**

******* FIRST CALL FOR PAPERS ********

IN THIS ISSUE

ToxTalk is mailed quarterly to members of the Society of Forensic Toxicologists, Inc. Non-members may now receive ToxTalk for $15 per calendar year. Mail a check (payable to S.O.F.T.) to ToxTalk at the address above. All members and others are invited to contribute to ToxTalk. Contact the Administrative Office for membership applications.

DEADLINES: Feb. 1, May 1, Aug. 1, and Nov. 1. NEXT DEADLINE EXTENDED TO JUNE 1st

COMMUNIQUE

from Patricia Mohn-Monforte, S.O.F.T. Executive Coordinator
1013 Three Mile Drive, Grosse Pointe Park, MI 48230-1412 (Tel/FAX: 313-884-4718)

KEEPING THE FAX STRAIGHT: We now have a FAX - same number as my telephone (313-884-4718) with an electronic switch so you can transmit at any time. If you get the answering machine, follow the instructions.

S.O.F.T. 1992 DIRECTORY: Here it is! As members had been notified, the information contained in the Directory was taken from your 1992 dues payment form. All members were sent Database Confirmation Sheets (if you paid) or Final Dues Notices (if you didn't). The Database Confirmation Sheets were your opportunity to make corrections or additions before the information was printed in the Directory. This ToxTalk mailing and the Directory printing were held until April to allow everyone ample opportunity to respond.

NEW DATABASE RUNNING! By maintaining the db information consistently on a single system, we should be able to minimize outdated information and omissions and ease the burden on your volunteer officers. Please send all address changes, etc. directly to Pat.

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IN MEMORIUM: JUNE K. JONES, M.S.

June Jones recently died after a long illness. June was a highly respected toxicologist known for her contributions both in the classroom and through discussion and leadership at SOFT and AAFS meetings. A memorial fund to be used for a one-time scholarship has been established in her honor through the Toxicology Section of AAFS. Contributions or condolences should be sent to: Memorial, c/o Jane Speaker, 2112 Cherry St., Philadelphia, Pa 19103. Make your check payable to AAFS. Acknowledgements and condolences will be forwarded to June's family.

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1992 COMMITTEES AND CHAIRPERSONS

Membership: Vina Spiehler, Ph.D.
Nominating: William H. Anderson
Budget, Finance and Audit: James Valentour, Ph.D.
ToxTalk Editor: Joseph R. Monforte, Ph.D.
Bylaws: Kurt Dubowski, Ph.D.
Publications (JAT Special Issue): H. Chip Walls, B.S.
Education Research Awards: Robert O. Bost, Ph.D.
Driving Under the Influence of Drugs/Alcohol: Norman Wade, M.S.
Meeting Resource: H. Horton McCurdy, Ph.D.
Health and Safety: Daniel McCoy, Ph.D.
Forensic Toxicology Laboratory Guidelines: Michael Peat, Ph.D.
Continuing Education and Training: Robert O. Bost, Ph.D.
Advisory Committee on Hair Analysis: Lee Hearn, Ph.D.
Compensation Review: William H. Anderson, Ph.D.

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CONNECTICUT '92

Splash around in brilliant fall foliage! SOFT presents Connecticut in full splendor -- river cruises, museums, historic colonial sites, antiquing along the shoreline, Yale University, Gillette Castle, Dinosaur Park, greyhound dog track, etc. Engorge yourselves with exquisite dining! Titillate your palate with everything from New England seafood to fine Italian to Cajun to traditional New England tavern cuisine. Don't miss it! A unique annual event in October - forests afire with scarlets, golds, and oranges as you've never experienced!

ATTENTION EXHIBITORS - WE DON'T WANT TO "LEAF" YOU OUT THIS FALL

As our 1991 exhibitors are aware, we ran out of space last year and had to turn away exhibitors. Although we have done our best to secure ample exhibit space this year, please guarantee your exhibit space early. We thank those exhibitors who have already responded. For further information, contact Dr. Joel Milzhoff at 203-566-4258.

RULE ON BLOODBORNE PATHOGENS

Submitted by: Daniel J. McCoy, Ph.D., Chairman, SOFT Health and Safety Committee

We knew it was coming. Now it's here. The new rules concerning bloodborne pathogens have been finalized. These rules apply to "all occupational exposure to blood or other potentially infectious materials" as defined in the Federal Register. For complete information on the rules, get a copy of Section 1910.1030 of the Federal Register. This Section was published in Vol. 56, No. 235 on December 6, 1991, beginning on page 64175.

SUMMARY OF RULES: The rules apply to all occupational exposures which are defined as "reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties." "Each employer must establish a written Exposure Control Plan to eliminate or minimize employee exposure . . . appropriate personal protective equipment such as, but not limited to, gloves, gowns, mouthpieces, resuscitation bags, pocket masks, or other ventilation" must be provided at no cost to employees. Additionally, the "employer shall clean, launder, and dispose of personal protective equipments . . . at no cost to the employee." Engineering controls as well as housekeeping procedures must also be documented in the Plan. "The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post exposure evaluation and follow-up to all employees who have had an exposure incident." Labels and signs on all containers or waste, refrigerators and freezers containing potentially infectious materials are also required. All employees must have access to the Plan information and must be appropriately trained on the proper protective measures to prevent exposure to bloodborne pathogens. Documentation with written records is a major component of the rules. The important dates for implementation of the program are as follows:

March 6, 1992 - Standard becomes effective
May 5, 1992 - Exposure Control Plan must be completed
June 4, 1992 - Information and training and record keeping must take effect
July 6, 1992 - Engineering and work practice controls, personal protective equipment, housekeeping, hepatitis and post-exposure evaluation and follow-up in place, labels and signs system in effect

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TREA$URY NOTE$

SUMMARY OF CASH FLOW REPORT
1/1/92 through 12/31/91

INCOME	EXPENSES	DESCRIPTION
$ 8,040.16	$ 1,000.00	1990 Annual meeting
	3,789.14	1991 Annual meeting
18,882.00	112.00	Dues/appl. fees
1,355.62	72.53	Interest/bank fees
437.00	875.83	Misc.
1,035.08	2,352.30	Lab Guidelines
113.49	5,076.91	ToxTalk
1,105.00	2,812.00	ERA
	2,672.55	Adminis. fees
	1,535.56	Adminis. expenses
	1,969.95	Other contract serv
	970.00	Acctg & filing fees
	192.67	Board of Dir. misc.
	401.87	Sec. & Treas. exp.
	206.38	JAT special issue
	950.02	Meeting receptions
$30,968.35	$24,989.71	TOTALS

As of April 20, 1992, 344 SOFT members have paid their dues and are considered members in good standing. Thank you for responding. Keep in mind, the 1993 dues notices will be included in the September issue of ToxTalk. We may not include a second notice in the December issue of ToxTalk because, historically, we hear from members who have paid and 1) pay their dues again or 2) take exception to being sent a notice when they have already paid. ToxTalk must contain identical material to each person receiving it. Any suggestions?

EDUCATIONAL RESEARCH AWARD CONTRIBUTIONS

Thanks to those who so generously contributed to the ERA. All 1992 contributors will be recognized in a future issue of ToxTalk. ERA application instructions are available from the SOFT Admin Office.

S.O.F.T. ANNUAL MEETING: OCTOBER 12 - 17 HARTFORD, CT

SPECIAL TOPIC: ANTIDEPRESSANTS

Coordinated by Bradford Helpler, Ph.D., ToxTalk Editorial Staff

Along with the case reports involving misadventures and/or frank overdoses of less well characterized antidepressant drug toxicities, we present, as part of what is hoped to be a continuing feature, a tabulation of data and information involving antidepressants as a general group. As with the previous tabulation presented on benzodiazepines, there are some voids that need to be filled. PLEASE send along any additions and/or comments which can fill the blanks. Also, if you have any additional case history and/or data involving the more obscure drugs listed or presented in these case reports, please submit it for future ToxTalk publication.

A very large "thank you" goes to H. Chip Walls for his efforts in putting this tabulation together, along with the bibiography on the tricyclic antidepressants, and also to Vickie Watts for her assistance in soliciting the presentations.

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BUPROPION CASE REPORT

Contributed by :

Bruce A. Goldberger, Barry S. Levine and Yale H. Caplan, Office of the Chief Medical Examiner, 111 Penn Street, Balto., MD 21201

Case Report :

A 38 year old woman with a history of alcohol abuse and depression was found unresponsive on a secluded street. No obvious cause of death was observed during autopsy. Medications noted included bupropion (Wellbutrin®) and fluoxetine (Prozac®). The final disposition of the case was pended for results of toxicological testing.

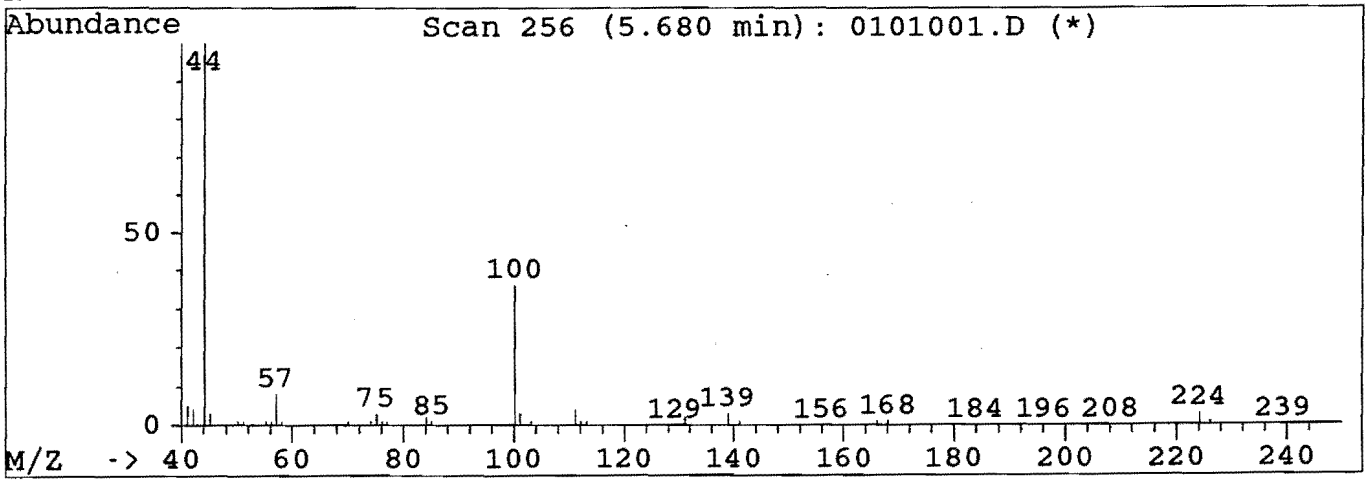
In accordance with the laboratory procedures, testing for alcohol and drugs was performed. Procedures included a volatile screen by headspace-GC, a basic drug screen by GC-NPD, an acid drug screen by GC-NPD, and morphine and other opiates by RIA. All positive drug findings were confirmed by GC/MS operated in scan mode. The results were :

heart blood :	ethanol	0.27 % w/v
	bupropion	4.2 mg/L
	fluoxetine	0.7 mg/L
urine :	positive for ethanol, bupropion, fluoxetine and flurazepam	

The retention time of bupropion is between sympathomimetic amines and meperidine on a HP-5 GC column. The mass spectrum of bupropion is shown in figure 1. Other bupropion metabolites were observed. Complete findings, including the disposition of bupropion metabolites, will be reported in a future publication. The cause of death was ruled alcohol and bupropion intoxication; the manner, suicide.

Bupropion is a relatively new antidepressant structurally unrelated to the first generation antidepressants. The drug is not a monamine oxidase inhibitor, nor is it believed to have major effects on the amine pump. A significant adverse effect of bupropion is seizures following therapeutic doses and overdoses. The optimal therapeutic range is 50-100 ng/mL.

Figure 1.



FATAL INTOXICATION INVOLVING ETRYPTAMINE

Contributed by: Ramon A. Morano, M.S., Fred B. Walker, M.D., Susan M. Plank, D.O., and Charles E. Spies, Maricopa County Medical Examiner, Phoenix, AZ

INTRODUCTION: Between 8:30 and 11:30 on the evening of the incident, a 19-yr-old female victim was alleged to have ingested a glass of beer containing two "hits" of a white powder. She had been told the material was "Ecstacy" (3,4-methylenedioxymethamphetamine). Witnesses to the event described the individual "hits," or doses, as the size of a dime. She subsequently became disoriented, vomited, and eventually went into full arrest. Resuscitation efforts by others present were unsuccessful. Fire department paramedics were called and, subsequently, pronounced her dead.

LABORATORY FINDINGS: Routine analysis for basic and neutral drugs was performed on 1 mL of heart blood, to which 200 nG of mepivicaine were added as an internal standard.

GC of the basic blood extract revealed the presence of methamphetamine and amphetamine at 120 uG/L and 50 uG/L, respectively, together with two unidentified constituents which eluted at RRT's (to caffeine) at 1.03 and 1.18. The principal constituent which eluted at 1.03 represented approximately ten times the area of the IS. The minor component at 1.18 represented 0.4 of the area of the IS. No ethanol was detected (cutoff 0.01 G/dL).

Initial identification of the principal constituent as etryptamine was made through a manual search of a bound database reference and confirmed by comparison to an authentic sample purchased from Sigma Chemical Company. Etryptamine was quantitated as the acetyl derivative using an on-column acetylation technique and the same chromatograph conditions used for the basic drug screen described above for qualitative screening.

	Etryptamine mG/L (G/kG)		
Blood	5.6	Stomach Contents	52.9
Urine	8.04	Brain	16.2
Vitreous Humor	2.4	Liver	18.3
Bile	22.0	Kidney	24.0

DISCUSSION: Etryptamine (ethyltryptamine; 3-[2-aminobutyl] indol) was originally marketed in the U.S. in the 1950's and early 1960's by the Upjohn Company under the trade name MONASE. MONASE (etryptamine acetate), a monoamine oxidase (MAO) inhibitor, was promoted as a therapeutic agent for the treatment of depression. Like other MAO inhibitors, etryptamine blocked the metabolism of serotonin and norepinepherine; it did not effect other enzymes responsible for the formation of serotonin. It was, however, removed from the market in March of 1962 for what was termed as an increasing number of instances of agranulocytosis.

Since its removal from the commercial drug market over thirty years ago, only two published reports of fatal intoxication have appeared in the literature. Both originated in Europe; one in Germany and the other in Spain. Inquiries locally to the office of the Drug Enforcement Administration and Arizona Department of Public Safety and nationally to the Drug Abuse Warning Detwork (DAWN) revealed no documented reports of etryptamine siezures or intoxications during the same period in the U.S.

Early pharmacodynamic studies indicate that etryptamine is rapidly absorbed (half life absorption = 0.62 hr), widely distributed (volume of distribution = 78.44 L), and eliminated primarily through the kidneys. The distribution data presented above are consistent with these conclusions.

Etryptamine is metabolized principally by 6-hydroxylation. The resulting metabolite, 3-(2-aminobutyl)-6-hydroxyindol, is not believed to be pharmacologically active based upon limited animal and in vitro studies. Reports differ as to the extent of the production of this metabolite and the effect of pretreatment (drug loading), but current studies failed to demonstrate its presence.

CONCLUSION: We believe that this case is important and its associated data significant because of the limited information available on this compound and the fact that, as of this time, it is not a controlled substance.

CALL FOR CASE NOTES FOR TOXTALK -- REQUESTED TOPIC: DUID - submit to Chip Walls, Tox Lab, Rm 706, 600 S State St, Syracuse, NY 13202 (315-435-3801) before June 1, 1992.

INFORMATION ON SELECTED DRUG: ANTIDEPRESSANTS

Generic Name	Trade Name	Structure	% Bio	Peak Levels	Protein Binding	Vd (L/kg)	Metabolites see sheet	T1/2 hours	pKa	Generic Name
Amitriptyline	Elavil Amitril Endep Amitid	Tricyclic	30-60	2-4 hrs.	96	8+/-2	a	8-51		Amitriptyline
Amoxapine	Asendin	Tricyclic		1-2 hrs.	90		b	7.7		Amoxapine
Clomipramine	Anafronil	Tricyclic		2-4 hrs.	90-95 %		c	20-84		Clomipramine
Desipramine	Norpramine Petrofrane	Tricyclic	33-51	3-6 hrs.	70-90 %	33-42	d	10-35		Desipramine
Doxepin	Adapin Sinequan	Tricyclic	13-45	2-4 hrs.	80 %	20+/-8	e	17+/-6		Doxepin
Fluoxetine	Prozac		100	4-6 hrs.	94	11-88	f g	70		Fluoxetine Hydrochloride
Imipramine		Tricyclic	22-77	3.4 hrs.	85	15+/-6	h	13+/-3		Imipramine
Loxapine	Loxitane	Tetracyclic		1-2 hrs.			i	1-4		Loxapine
Maprotiline	Ludiomil	Tetracyclic		4-8 hrs.	90 %	23-70	j	20-70		Maprotiline
Mianserin	INV	Tetracyclic	30	3 hrs.	90 %	13	k	6-39		Mianserin
Nortriptyline	Aventyl Pamelor	Tricyclic	46-70			18+/-4	l	18-35		Nortriptyline
Protriptyline	Vivactil	Tricyclic		6-12 hrs	92 %	22	m	3-8 days chr		Protriptyline
Trazodone	Desyrel	Miscellan		0.5-2.5	90 %		n	4-7		Trazodone
Trimipramine	Surmontil	Tricyclic		1-6 hrs.	94 %	20-50	o	16-40		Trimipramine
Viloxazine	Vivalan	Bicyclic		1.5 hrs.	85-90 %	0.5-1.5	p	2-5		Viloxazine
Buspirone	Wellbutin		4	40-90 mi	95	433	p2			
Zimelidine	INV	Bicyclic		2-3 hrs.	90 %	4	q	4-9		Zimelidine
Clorgyline		Monoamine Oxidase Inhibitor					r			Clorgyline
Isocarboxazid	Marplan	MAO		4			s	36		Isocarboxacid
Moclobemide		MAO					t			Moclobemide
Nialamide	Niamide	MAO					u			Nialamide
Pargyline	Eutonyl	MAO					v			Pargyline
Phenelzine	Nardil	MAO					w			Phenelzine
Selegiline	Eldepryl 1-deprenyl	MAO					x			Selegiline
Tranylcypromine	Parnate	MAO					y			Tranylcypromine
Furazolidone		MAO					z			Furazolidone
Lithium Carbonate		LiCO3					aa			Lithium Carbonate

METABOLITES

a. Amitriptyline: 10-hydroxyamitriptyline, 10-hydroxynortriptyline, nortriptyline, didesmethyamitriptyline. b. Amoxapine: 7-hydroxyamoxapine, 8-hydroxyamoxapine. c. Clomipramine: Monodesmethylclomipramine, 8-hydroxyclomipramine. d. Desipramine: 2-hydroxydesipramine, didesmethylimipramine. e. Doxepin: monodesmethyldoxepine. f. Fluoxetine hydrochloride: ??????? . g. Imipramine: desipramine, hydroxydesipramine, 2-hydroxydesipramine, 10-hydroxydesipramine, iminodibenzyl, 2-hydroxyiminodibenzyl, didesmethylimipramine, 2-hydroxyimipramine. h. Loxapine: amoxapine (desmethyl-loxapine), 7 & 8 hydroxyamoxapine, loxapine N-oxide, 8-methoxyloxapine, 8-hydroxyloxapine, 7-hydroxyloxapine. i. Maprotiline: desmethylmaprotiline, maprotiline N-oxide. j. Mianersin: N-desmethylmianersin, 8-hydroxymianserin. k. Nortriptyline: 10-hydroxynortriptyline, 10-hydroxydinortriptyline, dinortriptyline. l. Protriptyline: 10,11-dihydrodihydroxyprotriptyline, 10-hydroxyprotriptyline, 5,10-dihydro-10-formylanthracence-5-propylamine (rearrangement product). m. Trazodone: beta-(3-oxo-s-triazolic(4-3a)-pyridine-2-il)propionic acid (aka: OTPA), 1-(3-chlorophenyl)piperazine, p-hydroxytrazodone. n. Trimipramine: N-monodesmethyltrimipramine. o. Viloxazine: 4-hydorxyviloxazine, 5-hydroxyviloxazine. p. Buspirone: N/A. q. Zimelidine: Norzimeldine, zimeldine N-oxide, 3-(4-bromophenyl)-3-(3-pyridyl) acrylic acid. r. Clorgyline: N/A. s. Isocarboxazid: Hippuric acid, benzoic acid, benzhydrazine. t. Moclobemide: N/A. u. Nialamide: N/A. v. Pargyline: N/A. w. Phenelzine: Phenylacetylglutamine. x. Selegiline: Amphetamine, methamphetamine. y. Trancylpromine: N/A. z. Flurazolidone: N/A. aa. Lithium Carbonate: None.

A Clozapine/Fluoxetine Related Fatality

Contributed by: Robert Osiewicz, Erie County Medical Center, Buffalo, NY

Case History: A 36 year old male, a 5 year inpatient in a State Psychiatric Hospital, was found lying on his back on the floor next to his bed in his room. At the last hourly bed check, he appeared to be sleeping soundly in bed. The deceased had a long history of psychiatric problems dating back to his early twenties with associated substance abuse of marijuana, PCP and alcohol. His father died of a myocardial infarction at age 49 and he also was being treated for a heart condition while in the hospital. Six months prior to death, the patient was started on clozapine (200 mg at 4 p.m., 600 mg HS) for treatment of psychotic symptoms. Two months prior to death, he was started on fluoxetine 20 mg qd. for treatment of depression.

Heart blood, urine, bile, liver, brain and a portion of the gastric contents were submitted for toxicological examination.

Analytical Findings: A general volatiles/acid/neutral/basic drug screen revealed the presence of only clozapine and fluoxetine. Absolute identification was by GC/MS with comparison against an authentic standard and gas chromatography with an NPD was used for quantitation.

	Blood	Liver	Gastric Contents*
Clozapine	7.1 µg/ml	82 µg/g	1.1 mg
Fluoxetine	1.9 µg/ml	29.4 µg/g	0.32 mg

*Autopsy records did not indicate the total amount of gastric contents.

Clozapine[1], an anti-psychotic drug with few extrapyramidal side effects, was introduced to the American market in the 1970's but was withdrawn when it was shown to cause agranulocytosis. It was reintroduced in 1990 for use under carefully supervised conditions. Plasma concentrations after usual clinical doses range up to 1 µg/ml with the average levels between 0.4 to 0.6 µg/ml. A 1978 report[2] mentioned two cases where convulsions were experienced at plasma concentrations of 1.3 and 2.06 µg/ml respectively.

The fluoxetine concentrations while higher than reported therapeutic levels were not at levels seen in fatalities and reported elsewhere.

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[1]Baldessarini, R. et al, Clozapine: A Novel Anti-psychotic Agent, *New England Journal of Medicine*, 324(11), 1990, pp. 746-754.
[2]Simpson, G. et al, Clozapine Plasma Levels and Convulsions, *Am J Psychiatry*, 135(1), 1978, pp 99-100.

A SUICIDAL OVERDOSE OF BUPROPION (WELLBUTRIN)

Contributed by: James E. Meeker*, Constance W. Som, and John Hain, *Institute of Forensic Sciences Toxicology Laboratory, Oakland, CA 94609.

INTRODUCTION: Bupropion is an antidepressant drug of the aminoketone class that is chemically unrelated to tricyclic, tetracyclic or other antidepressant agents [1]. It was originally introduced into the market in the mid-1980's but was removed in February 1986 due to an increased incidence of siezures [2]. Bupropion was recently reintroduced to the market at a lower recommended dosage. Following oral administration, peak plasma concentrations occur within a half-life of approximately 14 hours.

There have been no reported fatalities due to Bupropion in the literature. This report describes bupropion biological fluid and tissue concentrations following a suicidal overdose of this drug.

CASE HISTORY: An obese, 45-yr-old female with a history of psychological problems became distraught over a domestic argument at approximately 19:00 Hr. The woman consumed the contents of two bottles (150-100 mG tablets) of bupropion and ran from the house. The victim was found at 19:16 Hr. and transported by ambulance to the hospital at 19:35 Hr. Upon arrival at the hospital, the victim was semiconscious. Resuscitation was attempted without success, and the woman was pronounced dead at 22:19 Hr.

METHODS AND RESULTS: Extraction of bupropion was carried out using a modification of the method reported by Foerster et al [3]. Briefly, 3 drops of concentrated ammonium hydroxide and 5 mL of 1-chlorobutane/isopentyl alcohol (98.5:1.5) were added, respectively, to 1.0 mL blood, 0.5 mL vitreous fluid and a 0.5 mL aliquot of liver homogenate (20% W/V). 1.0 uG of cyclizine was spiked into each sample at this point as an internal standard. Following extraction, 4.0 mL of the organic layer were recovered and back extracted into 2 mL of 0.1 M HCl. The organic layer was aspirated, and 100 uL of 2 M NaOH and 2 mL of 1-chlorobutane/isopentyl alcohol (98.5:1.5) were added to re-extract the drug analytes into solvent. The organic layer was recovered and evaporated to approximately 50 uL for GC/NPD analysis.

Separation and quantitation of bupropion was performed on a GC/NPD equipped with dual megabore columns (DB-1, 15 M x 0.542 mm, 1.5 uM film thickness; and a DB-17, 15 M x 0.545 mm, 1.0 uM film thickness), temperature programmed from 120 degrees C (held for 1 min.) to 220 degrees C (held for 5 min.) at a rate of 20 degrees C/min. Injection port and detector block temperatures were, respectively, 250 and 300 degrees C.

Subclavian vein blood, vitreous humor, and liver obtained at autopsy were quantitated for bupropion. The results were:

Subclavian Blood	13.0	uG/mL
Vitreous Humor	11.0	uG/mL
Liver	8.7	uG/G

The blood concentration in this case is approximately 250 times greater than reported therapeutic concentrations [4]. Steady state plasma concentrations ranged from 0.024 to 0.068 uG/mL for 80 people receiving 100-450 mG of bupropion per day.

REFERENCES:
[1] Product information. Physician Desk Reference 813-816, 1990
[2] S. Cohen, "New Drugs on the Market." Toxi-lab News 9(1):4-5, 1990.
[3] E.H. Foerster et al, "A Rapid, Comprehensive Screening Procedure for Basic Drugs in Blood and Tissues by Gas Chromatography." J Anal Tox 2:50-55, 1978.
[4] T.B. Cooper et al, "Determination of Bupropion and its Major Basic Metabolites in Plasma by Liquid Chromatography with Dual-Wavelength Ultraviolet Detection." J Pharm Sci 73:1104-1107, 1984.

ToxTalk CALL FOR CASE NOTES

Material should be submitted in "print-ready" form whenever possible: 8-1/2" x 11" white paper; top and side margins = 1/4" each, bottom margin = 1/2"; condensed print, do not waste space. Length should not exceed 1 page; 1/2 page preferred for case notes. Priority given to papers on requested topics. For details, contact Dr. Monforte, ToxTalk Editor (313-224-5626).

Special issue: Tricyclic antidepressants

A highly biased review from selected portions of the literature. Some old, mostly new, obviously "weak" on analytical articles (but intentional). My apologies to the authors who should have been included. Please send, write, or call y'alls suggestions to make this review more complete.

Chip Walls, Toxicologist, Onondaga County Toxicology Laboratory, 600 S. State St., Syracuse, NY 13202

1. CARDIOVASCULAR EFFECTS OF POLYCYCLIC ANTIDEPRESSANTS. Mahaptra, Paul, Mahaptra, and Winter. Angiology 10/86 p. 709-717.
2. ELECTROCARDIOGRAPHIC AND CLINICAL FEATURES OF TRICYCLIC ANTIDEPRESSANT INTOXICATION. Pellinen, Färkkilä, Heikkilä, and Luomanmäki. Clinical Research 19:12-17, 1987.
3. A FATAL TOXICITY INDEX FOR ANTIDEPRESSANT POISONING. Henry. Acta Psych. Scand. 1989:80 (Suppl. 354):37-45.
4. WHY DO AMITRIPTYLINE AND DOTHIEPIN APPEAR TO BE SO DANGEROUS IN OVERDOSE? Montgomery, Baldwin, and Green. Acta Psych. Scand. 1989:80 (Suppl. 354):47-53.
5. FATAL POISONINGS WITH ANTIDEPRESSANTS IN FINLAND 1985-1987. Vuori, Klaukka, and Lahti. Acta Psych. Scand. 1989:80 (Suppl. 354):55-60.
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ELMER GORDON OPEN FORUM

An Opportunity for Informal Dialogue

Norm Wade recommends the following: HIV/AIDS AND THE HEALTH CARE WORKER, SEIU Sixth Edition, Jan. 1991 (Occupational Health and Safety Dept., Service Employees International Union, AFL-CIO, CLC, 1313 L Street NW, Washington, DC 20005 (tel: 202-898-3446)

Your complimentary copy of "THE TECHNOLOGY OF BREATH-ALCOHOL ANALYSIS" by SOFT member Kurt Dubowski should be arriving soon. DHHS Publication No. (ADM)92-1728 printed 1992.

CONGRATULATIONS ARE IN ORDER!

Marina Stajic - new A.A.F.S. President

Jim Garriot, Dick Shaw and Marilyn Huestis - AAFS Tox Section Awardees

Joe Monforte - Wayne County Employee of the Year

CAREER MOVES: The following SOFT members have recently, or soon will be, "retired" (for some this means continuing with their toxicology careers) - Neal Reading, Yale Caplan, Dick Shaw, Bob Cravey, Joan Vogel, and Dick McGarry. Best wishes to all!

CAREER OPPORTUNITIES

The following is printed as a courtesy to our members as space permits. There is no fee involved.

TOXICOLOGIST - Ph.D., experience includes bioanalytical tox lab methods and understanding of unusual requirements of forensic casework. Competitive salary & benefits. Contact: National Medical Services, P.O. Box 433A, Willow Grove, PA 19090-0437.

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FORENSIC TOX LAB DIRECTOR - Ph.D. in tox or equiv experience with supervisory abilities. N.M. Office of Medical Investigator. $45,000 minimum. Deadline 5/8/92. CV + letter to: Mary Sanchez, Univ or New Mexico, Medical Ctr Human Resources, Albuquerque, NM 87131.

PROFESSIONAL CALENDAR

CALIFORNIA ASSOCIATION OF TOXICOLOGISTS quarterly meetings and workshops. For information contact Susan Knight, CAT V.P., 18457 Santa Carlotta, Fountain Valley, CA 92708 (phone/fax: 714-965-9854) MAY 1-2, 1992: TOXICOLOGY TRAINING COLLOQUIUM, Newport Beach, CA, Host: Dr. Irving Sunshine. (See insert) AUG 7-8: IA Workshop, Santa Clara, CA; NOV 6-7 QC Workshop, Garden Grove, CA.

ATTN: SOFT MEMBERS - Interested in the CAT Tox Training Colloquim but can't be in Calif. on May 1st? Send your name and address to Susan Knight (address above) if you would like to see this conference repeated at a different location and later date.

"PROFESSIONAL PRACTICE IN TOXICOLOGY: A REVIEW" June 21-25, 1992 sponsored by AACC and NACB at the University of Cincinnati. Contact Joanna Glenn, AACC, 2029 K Street, NW, 7th floor, Washington, DC 20006 or call SOFT member Donald Cannon, Ph.D., 513-745-1359, FAX 513-745-1321

CSFS ANNUAL CONFERENCE - AUGUST 20-25, HALIFAX, NOVA SCOTIA, CANADA. Contact Fredricka Monti, Executive Secretary, CSFS, Suite 215, 2660 Southvale Crescent, Ottawa, Ontario, Canada K1B 4W5 (tel: 613-731-2096)

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* S.O.F.T. ANNUAL MEETING - OCTOBER 12-17, 1992 - HARTFORD, CONNECTICUT: For further information, contact C. Neal Reading, Ph.D., P.O. Box 1689, Hartford, CT 06144 (telephone: 203-566-4258) *
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Future SOFT meeting sites: 1993 - SOFT/CAT Phoenix (V. Watts)
1994 - SOFT/TIAFT Tampa (H. McCurdy)
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A.A.F.S. ANNUAL MEETING - FEBRUARY 15-20, 1993 - BOSTON

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This two-day conference will include presentations by experienced practitioners on approaches to on-site personnel training and issues essential to toxicology testing procedures. Other pertinent topics will include governmental, regulatory and quality concerns in laboratory practice. In addition, small discussion groups will enable participants to focus on individual problems. Details of the presentations will be forthcoming in a training manual which will be produced by CRC Press under CAT auspices.

For information on colloquium registration, reduced hotel rates, and discount airfares, please contact:

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SOCIETY OF FORENSIC TOXICOLOGISTS, INC.

ABSTRACT OF PAPER FOR 1992 MEETING
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15 MINUTES WILL BE THE MAXIMUM TIME ALLOTTED FOR PLATFORM PRESENTATIONS.

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DEADLINE DATE FOR ABSTRACT - JUNE 30, 1992.

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AVOID UNINFORMATIVE PHRASES SUCH AS "...will be presented."

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M E M O R A N D U M

DATE: June 10, 1992
TO: Editor Monforte
FROM: Patricia Mohn-Monforte, ToxTalk, Publications Editor

RE: MARCH 1992 TOXTALK - PRODUCTION REPORT

352
~~324~~ issues of the MARCH 1992 issue of TOXTALK were distributed 4/17/92.

BULK RATE: 324 U.S. (323 members, 1 comp. AAFS)
(@ .30 bulk stamps ea. + $13.12 = $110.32;
first class would have cost $392.04)

FIRST CLASS: 21 Canada (@ $1.55) 32.55, 5.72
3 Swiss, Netherlands, Greece (@ $5.24)
The above included the directory.

The following were mailed without the directory

FIRST CLASS: 1 comp. CSFS @ .86
1 comp. Germany @ $2.12
2 US subscriptions @ .75

352 TOTAL DISTRIBUTED - (last issue, 370)

EXPENSES:

$272.15 printing (paid directly to printer) - NOTE I used a 10% discount coupon for this
100.00 first class postage stamps (SOFT check). See below
432.45 publication editor fees
34.42 misc. + add'l bulk postage charge (13.12)

$839.02 Total

COMMENTS:

1992 SOFT DIRECTORY was included with this issue. Note it was mailed only to members and a comp. copy to AAFS. We should consider mailing the Directory in the June issue. As it is now, persons who join or members who pay their dues after the March issue is mailed, get a copy of the Directory and back issues of ToxTalk, all going first class. On the other hand, the March mailing is an excellend incentive to pay those dues. 33 persons have been added to the roster as of this date.

FIRST CLASS POSTAGE is getting really high, particularly for the non-US members. I requested a $100 check for all first-class postage and will use it until it is gone. I noted the postage fees to give you some idea of actual costs. About $43 was spent on first class postage for this issue.