

Role of laboratory tests in managing acute poisonings: a survey of emergency physicians

BARTOMEU CASTANYER PUIG¹, JORDI PUIGURIGUER FERRANDO², BERNARDÍ BARCELÓ MARTÍN¹, SANTIAGO NOGUÉ XARAU^{3,4}

¹Servicio de Análisis Clínicos y Unidad de Toxicología, ²Servicio de Urgencias y Unidad de Toxicología, Hospital Universitari Son Espases, Palma de Mallorca, Spain. ³Sección de Toxicología, Área de Urgencias, Hospital Clínic, Barcelona, Spain. ⁴Grupo de Investigación "Urgencias: procesos y patologías", IDIBAPS, Barcelona, Spain.

CORRESPONDENCE:

Bartomeu Castanyer Puig
Servicio de Análisis Clínicos
y Unidad de Toxicología
Hospital Universitari Son Espases
Carretera de Valldemossa, 79
07010 Palma de Mallorca, Spain
E-mail: tomeu.castanyer@ssib.es

RECEIVED:

10-8-2011

ACCEPTED:

4-10-2011

CONFLICT OF INTEREST:

None

ACKNOWLEDGEMENTS:

The present study was partly supported by a grant (SGR 2009/1385) awarded by the Generalitat de Catalunya.

Objective: To survey physicians who treat acute poisoning cases to determine their attitudes toward laboratory testing in these cases and also toward certain tests for the management of common poisonings.

Methods: A questionnaire was sent to physicians working in the emergency departments of 2 hospitals with toxicology units and to physicians attending toxicology training courses. Survey items asked about professional data; the degree of importance the physicians attached to laboratory testing at different stages in the care process; which 3 tests the respondents considered important in 17 different acute poisoning scenarios; and which laboratory test they considered highly important was unavailable at the hospitals where the physicians worked.

Results: Eighty-eight valid questionnaires were returned; 69 of them (78%) were from physicians attending toxicology courses and 19 (22%) were from emergency room physicians. The respondents in both groups believed that laboratory tests were most important when cases of acute poisoning were being diagnosed; 62% of the emergency department physicians and 58% of the trainee physicians expressed that opinion. More emergency department physicians at hospitals with toxicology units considered laboratory testing to be of great importance (52% of such physicians vs 26% of the trainees, $P < .05$). In the 17 poisoning scenarios considered, the respondents named as their first choice a urine test to screen for drug abuse (benzodiazepines, antidepressants [tricyclics and selective serotonin uptake inhibitors]; heroine; GHB [gamma-hydroxybutyrate]; and ecstasy). A specific quantitative test that could detect the cause of poisoning was named as first choice only for smoke inhalation, in which case the respondents would measure carboxyhemoglobin concentration. Tests named for other poisonings were nonspecific.

Conclusions: The surveyed physicians confirmed that the purpose of laboratory testing in toxicology is to confirm the diagnosis suggested by the patient's symptoms. [Emergencias 2012;24:447-453]

Keywords: Survey. Poisoning. Laboratory tests.

Introduction

Acute poisoning is a common reason for visits to the emergency department (ED). Most of these patients do not require specific therapy and show complete recovery; only a small proportion of poisonings are life-threatening. In Spain, mortality secondary to acute poisoning is estimated at 0.24%¹. Laboratory confirmation of the toxin in-

volved is part of the care process, but analytical toxicological studies are not systematically requested. In a multicenter study by Burillo-Putze et al. on the epidemiology and management of acute poisoning in Spain, laboratory tests were not considered necessary in 55% of patients treated for poisoning¹. The availability of laboratory services varies among hospitals² and even within a particular hospital according to day (weekday or

holiday) and time the request is made. This may hinder the management of these patients in the ED, since a number of poisonings occur at night or over weekends¹. The fact that laboratory service availability is not uniform among hospitals also contributes to variability in clinical practice in the field of clinical toxicology.

Surveys are a type of observational study in which researchers do not change the setting or control the process under observation. The two most common types of surveys are those that examine perception, i.e. what the respondent thinks or feels about a subject, and those that examine knowledge, in which the questions are aimed at determining what the respondent believes he/she knows about the subject. Both are good tools for healthcare management and allow us to identify areas for improvement³⁻⁶.

The role of the laboratory in the management of acute intoxication, specifically the detection and quantification of the causal agent, has been the subject of constant debate over the years, but in general such data are considered at least useful for clinical decision-making^{7,8}.

The objective of the present survey was to evaluate the perception of physicians attending cases of acute poisoning of the role of laboratory tests at different stages of the care process and the subjective importance of certain tests for the clinical management of the most frequent types poisoning encountered in our setting.

Method

The survey was directed at emergency physicians (EP) attending specific training courses on clinical toxicology, held between January 2008 and December 2009, and ED physicians working in hospitals with a consolidated clinical toxicology unit (CTU), namely Hospital Clínic Barcelona and Hospital Son Espases, Palma de Mallorca. The survey consisted of four parts. The first was designed to collect data on the respondents, the workplace, the medical specialty and professional experience. The second part focused on the degree of importance they attributed to laboratory testing at different stages of the care process: a) diagnosis, b) initiation of therapeutic measures, c) monitoring or observation of the patient, d) decision on hospital admission e) the discharge report. The different options were: 1) not important, 2) not very important, 3) relatively important depending on the case, 4) significant and 5) decisive. To facilitate understanding of the results

and conclusions, we grouped the options as follows: decisive (options 4 and 5) and inconclusive (options 1, 2 and 3). In the third part, the physicians were asked to indicate a maximum of three laboratory tests they considered fundamental in the care process with respect to the following 17 types of poisonings: acute ethanol, benzodiazepines, antipsychotics, tricyclic antidepressants, Selective serotonin re-uptake inhibitors (SSRIs), paracetamol, salicylates, lithium, cocaine, heroin, gamma hydroxy butyrate (GHB), methanol, ecstasy (MDMA), caustics, smoke, mushrooms and pesticides. Finally, in the fourth part they were requested to indicate a laboratory test they considered basic but not available at their center. The results of this section related to the workplace. The survey was designed by three clinical toxicologists and 5 EPs with extensive experience in the two hospitals with TCU.

The survey was anonymous and the criterion for acceptance was marking only one option response box in the professional data section. The results were transferred to an Excel spreadsheet (Microsoft Corporation). The data were analyzed using descriptive statistics, and variables with only two possible answers were compared using chi-square test. P values < 0.05 were considered statistically significant.

Variables related to professional data, such as the workplace, years of experience, professional category and medical specialty, were analyzed regardless of whether the respondents were participants at a training course in clinical toxicology or worked in a hospital ED with a TCU.

Results

Ninety four surveys were obtained, of which 88 were considered valid: 69 (78%) were collected from course participants and 19 (22%) from ED-dependent TCU physicians. Laboratory tests were considered most important at the diagnostic stage (Figure 1) regardless of the group the respondents belonged to (62% of the TCU group, 58% of the group undergoing training courses). Considering all stages, the role of the laboratory was considered more relevant ($p < 0.05$) by the TCU group (52%) than by the training course group (26%). More specifically, there were significant differences in the importance attached to the role of the laboratory at the time of patient observation (53% vs 21%), deciding on hospital admission (48% vs 5%) or discharge (49% vs 11%).

Table 1. Summary of professional activity data of physicians surveyed

	N	%
Workplace		
Emergency department, Public Hospital	44	50
Emergency department, Primary Care	14	16
Out-of-hospital emergency service 061	30	34
Professional Category		
Head of department	7	9
Attending physician	55	62
Contracted Shift physician	17	19
Medical resident	9	10
Experience (in years)		
0-2	12	13
3-5	27	31
6-9	22	25
> 10	27	31
Specialty		
Family medicine	49	55
Internal medicine	12	14
Emergency physician	13	15
Other*	14	16

*Pediatrics (1), Digestive tract (1), Intensive care (5), Anesthesia and resuscitation (4), Geriatrics (1), Public institutions (2).

For the training course group, the importance of laboratory tests decreased with advancing stages of the clinical care process; maximal at the diagnostic stage (58%) and minimal at admission (5%) and discharge stages (11%), while for the TCU physicians it remained fairly constant at all stages.

Physicians trained in internal medicine and those who defined themselves as EPs in relation to other specialists working regularly in the ED, more frequently considered laboratory tests as decisive for the diagnosis of poisoning ($p < 0.01$), and to determine the admission of these patients

($P < 0.05$) (Table 2). Internal medicine physicians more frequently considered laboratory tests as decisive for the other stages of the care process (initiating therapeutic measures, $p < 0.05$, and for the decision on admission, $p = 0.01$), compared to the other respondents.

Those working in hospital EDs most often considered the role of the laboratory as not decisive ($p < 0.01$) regarding the admission of poisoned patients. Those working in the out-of-hospital emergency centers more frequently considered laboratory tests as decisive at the stage of initiating therapeutic measures ($P < 0.05$) (Table 3). Finally, no differences were found between respondents according to age and professional category for any stage of the care process.

Regarding the 17 intoxications listed (Table 4), screening for substance abuse with urine analysis was considered the main analytical test necessary in 6 of them (benzodiazepines, tricyclic antidepressants, SSRIs, heroin, GHB and ecstasy). In the case of smoke poisoning, carboxyhemoglobin (COHb) was the only specific quantitative test considered as the first option, while all other first choices were nonspecific tests aimed at assessing target organ function. Troponin test was considered the first option in cases of cocaine poisoning. Of a total of 51 possible responses, arterial blood gas test was most cited (15 times), followed by drug screening (7), creatinine (5) and transaminase values (4).

Finally, Table 5 shows the survey results for the most basic laboratory test not available at the center where the respondents worked.

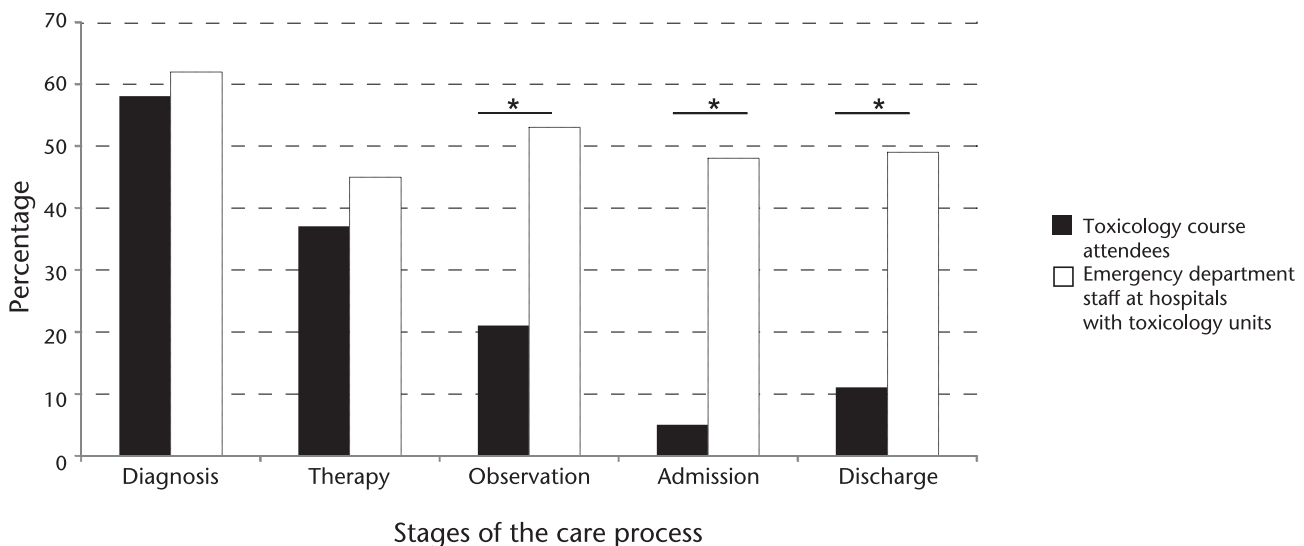


Figure 1. Opinion about the role of toxicological laboratory tests at different stages of the care process. Comparison between the two groups of physicians surveyed. * $p < 0.05$.

Table 2. Opinion about the role of toxicological laboratory tests at different stages of the care process according to medical specialty

%	Diagnosis (%)	Therapy (%)	Observation (%)	Admission (%)	Discharge (%)
Family medicine					
Decisive	51	45	51	45	45
Not decisive	49	55	49	55	55
Internal medicine					
Decisive	83*	17	25	8	17
Not decisive	17	83**	75	92***	83****
Emergency medicine					
Decisive	92*	54	54	46	23
Not decisive	8	46	46	54	7****
Other					
Decisive	61	56	50	50	61
Not decisive	39	46	50	50	39

*Internal medicine + Emergency medicine + Family medicine vs other specialties (p = 0.0019); **Internal medicine vs other specialties (p = 0.038); ***Internal medicine vs other specialties (p = 0.0135); ****Internal Medicine + Emergency medicine vs Family medicine and other specialties (p = 0.017).

Discussion

The physicians surveyed believed that the role of the laboratory is important in the management of poisoned patients, especially in the initial or diagnostic stages, mainly to corroborate the suspected diagnosis made on the basis of clinical symptoms and medical history.

The survey showed differences between two groups of physicians - EPs undergoing specific training in clinical toxicology and those working in hospitals with toxicology units. In Spain there are no official clinical toxicology studies available as there are in other countries such as USA.

The present study analyzed different professional aspects of physician respondents such as

Table 3. Opinion about the role of toxicological laboratory tests at different stages of the care process according to place of work

%	Diagnosis (%)	Therapy (%)	Observation (%)	Admission (%)	Discharge (%)
Public Hospital ED					
Decisive	69	42	38	27	33
Not decisive	31	58	62	73*	67
Primary Care Center ED					
Decisive	43	71**	57	64	57
Not decisive	57	29	43	36	43
Out-of-hospital EMS					
Decisive	57	37	57	50	53
Not decisive	43	63	43	50	47

ED: Emergency Department; EMS: Emergency Medical Services. *Public hospital EDs vs. Primary care EDs and out-of-hospital EMS (p = 0.0093); **Primary care EDs vs. Public hospital EDs and out-of-hospital EMS (p = 0.033).

workplace, years of experience, professional category and medical specialty and training.

Levy et al⁹ showed that out-of-hospital pediatricians and family physicians, when asked about interpreting a positive or negative laboratory test result for suspected substance abuse, had little knowledge of analytical toxicology, and found no differences according to specialty. In our work, we did find some differences. Specifically, specialists in Internal Medicine ascribed significantly lower importance to laboratory test results than other EPs with respect to initial phases of therapeutic measures or decisions on hospital admission, while the pattern of responses was very similar to the other EPs regarding the other stage of the care process.

The variability observed in clinical toxicology practice could be avoided if there were a consensus of expert opinion regarding decision-making

Table 4. Laboratory tests considered to have greatest diagnostic value for each type of poisoning

Poisoning by	Order of responses					
	First place	%	Second place	%	Third place	%
Ethanol	Glucose	35	AST/GOT	12	Screening	11
Benzodiazepine	Screening	34	ABG	28	Venous blood gases	11
Antipsychotics	CPK	34	ABG	28	Venous blood gases	11
Antidepressants	Screening	22	Ions	12	ABG	11
SSRIs	Screening	23	Venous blood gases	12	Creatinine	11
Paracetamol	AST/GOT	34	Prothrombin time	19	Serum concentrations	17
Salicylates	Venous blood gases	17	Hb/Prothrombin time	11	Serum concentrations	9
Lithium	Creatinine	25	Serum concentrations	21	Ions	13
Cocaine	Troponin I	28	Screening	27	CK	22
Heroin	Screening	43	ABG	27	Glucose	9
GHB	Screening	29	Glucose	11	Creatinine/ABG	10
Methanol	Venous blood gases	19	Lactate	16	ABG	10
Ecstasy	Screening	29	CK/Troponin I	13	Creatinine	10
Caustics	Hb	24	ABG	15	Venous BG/leukocytes	9
Smoke	Carboxy-Hb	38	ABG	26	Lactate	19
Mushrooms	AST/GOT	20	Prothrombin time	14	GGT	12
Pesticides	AST/GOT	15	ABG	13	Creatinine	11

SSRIs: serotonin reuptake inhibitors; Hb: hemoglobin; ABG: arterial blood gases; GHB: Gamma hydroxyl butyrate.

Table 5. Results of the survey concerning laboratory tests that respondents considered basic and yet not available in the laboratory of their center

	Frequency	Place of work		Type of hospital			Out-of-hospital activity	
		Hospital	Out-of-hospital	H3	H2	H1	O61	Primary care
Ethanol	7	4	3	2	1	0	3	1
Paracetamol	4	4	0	3	1	0	0	0
Ecstasy	4	4	0	4	0	0	0	0
Co-oximetry	4	0	4	0	0	0	2	2
GHB	3	3	0	3	0	0	0	0
Methanol	2	2	0	2	0	0	0	0
Ethylene glycol	2	2	0	2	0	0	0	0
Remedi (toxicological screening)	2	2	0	2	0	0	0	0
New antipsychotics	1	1	0	1	0	0	0	0
Urine toxins	1	0	1	0	0	0	1	0
SSRIs	1	1	0	1	0	0	0	0
Digoxin	1	1	0	0	0	1	0	0
NSAIDs	1	1	0	0	0	1	0	0
Lactate	1	1	0	0	1	0	0	0
Benzodiazepine	1	1	0	1	0	0	0	0
Metals	1	1	0	0	0	1	0	0
Cocaine and its metabolites	1	1	0	1	0	0	0	0

H1: level 1 public hospital; H2: level 2 public hospital; H3: level 3 public hospital; Remedi: Bio Rad (Hercules, CA, USA.) Remedi Drug Profiling System; SSRIs: serotonin reuptake inhibitors, GHB: gammahydroxybutyrate; NSAIDs: non-steroidal anti-inflammatory drugs.

ing, as proposed by Pettie et al¹⁰. The workplace influenced some of the responses. The absence of diagnostic laboratory facilities in out-of-hospital settings conditions some results because the attending physicians are compelled to administer treatment without the diagnostic certainty afforded by laboratory tests¹¹.

Our results showed no statistically significant differences in reliance on laboratory tests in the management of acute poisoning according to respondent work experience, unlike other studies. Thanacoody et al¹² analyzed the reasons given by inexperienced physicians for consulting the UK National Poisoning Information Service in cases of paracetamol poisoning; the second most frequent reason (30% of cases) was to obtain the interpretation of laboratory results. Levy et al⁹ noted in their conclusions that young respondents (36% were younger than 41 years) needed more training and access to expert opinion.

Considering the second objective of the study, rather than concern about the nature of the toxin requiring specific tests, EPs were more interested in the state of the target organ involved. This is consistent with the recommendation to treat the patient and not the cause of poisoning¹³. This basic premise is based on pragmatic aspects and insufficient specific training in clinical toxicology. Ignorance of the patterns of toxicity of certain products, the availability of analytical techniques and, above all, the correlation between plasma concentration of the toxin and clinical symptoms, are consequences of this lack of training. The increased number of scientific

publications on toxicokinetics or toxicodynamics¹⁴⁻¹⁸ may help reduce this ignorance. An exception is paracetamol poisoning, where the determination of its concentration is essential for correct therapeutic decision-making, which logically influenced the results of the survey, appearing as one of the three most important determinations in the context of poisoning by this drug.

It is almost impossible for any laboratory to provide comprehensive toxicological analysis for the full range of toxins responsible for acute poisoning and make the results available in a clinically useful period of time. For these reasons, it is essential that laboratories adapt their test availability tests to clinical needs, defined by the current epidemiology of poisoning¹⁹, and having their own record of poisoning is highly recommended.

Another consideration is the wide variability of service portfolio offered by different laboratories, currently determined more by economic than technical or instrumental factors. This may explain some of our survey responses to questions about what laboratory test the physicians considered basic and unavailable. Surprisingly, the quantification of ethanol was the test most demanded. First, the main group of respondents demanding this test worked in hospitals, whose laboratories should almost necessarily offer ethanol quantification; the others worked in out-of-hospital emergency services, where this test would provide diagnostic confirmation but would not be particularly helpful in therapeutic management.

Another situation, equally paradoxical and worrying, is the purported absence of quantitative paracetamol and digoxin tests in the hospital. If confirmed, this would constitute a breach of the CALITOX quality criteria²⁰. The demand for certain quantitative tests in a hospital setting is clearly reasonable when dealing with suspected poisoning by agents that are concentration-dependent, such as methanol or polyethylene glycol, even if only required by a relatively small proportion of physicians. The COHb test solicited by hospital physicians deserves special mention given the fact that reliable analytical techniques are required for its measurement²¹. The survey respondents response regarding the determination of the quantity of cocaine and its metabolites in serum in hospitals leads us to think they know the time limitations of regular positive screening tests for drug abuse²². In the same line, surveys demanding more specific screening tests than the common immunoassay reflect a general concern about the limitations of these tests²³. The request for toxicological screening test for benzodiazepines²⁴ and NSAIDs are a new finding, indicating the need to improve toxicological training in the ED.

Training limitations and the consequent gaps in knowledge are not unique to purely analytical aspects in the process of care of acute poisoning. Lidder et al²⁵ showed that physician knowledge about the clinical use and route of administration of new antidotes required improvement. Shah et al⁵ also found deficiencies in the system of hospital admission coding according to the International Classification of Disease version 10 (ICD-10) with respect to new designer or recreational drugs. The results of these studies show that clinical toxicology courses improve the physician knowledge²⁶.

This study has certain limitations. Firstly, participant selection bias may have been introduced due to the absence of exact data on the study population; we only had the number of surveys collected in both groups, and our respondents can be assumed to have greater interest in clinical toxicology than other physicians with the same professional category. Secondly, despite the number of surveys collected, classification based on professional characteristics possibly meant under-representation in one or the other group.

References

- Burillo-Putze G, Munne P, Duenas A, Pinillos MA, Naveiro JM, Cobo J, et al. National multicentre study of acute intoxication in emergency departments of Spain. *Eur J Emerg Med.* 2003;10:101-4.
- Norris RL, Martin JH, Thompson E, Ray JE, Fullinlaw RO, Joyce D, et al. Current status of therapeutic drug monitoring in Australia and New Zealand: a need for improved assay evaluation, best practice guidelines, and professional development. *Ther Drug Monit.* 2010;32:615-23.
- Chan AS, Isbister GK, Kirkpatrick CM, Duffull SB. Assessing risk of a prolonged QT interval—a survey of emergency physicians. *Int J Emerg Med.* 2008;1:35-41.
- Seger DL, Hantsch C, Zavoral T, Wrenn K. Variability of recommendations for serum alkalinization in tricyclic antidepressant overdose: a survey of U.S. Poison Center medical directors. *J Toxicol Clin Toxicol.* 2003;41:331-8.
- Shah AD, Wood DM, Dargan PI. Survey of ICD-10 coding of hospital admissions in the UK due to recreational drug toxicity. *QJM* 2011;104:779-84.
- White SR, Baker B, Baum CR, Harvey A, Korte R, Avery AN, et al. 2007 survey of medical toxicology practice improvement activities. *J Med Toxicol.* 2010;6:286-93.
- Flanagan RJ. The poisoned patient: the role of the laboratory. *Br J Biomed Sci.* 1995;52:202-13.
- Thomas SH, Watson ID. Laboratory analyses for poisoned patients. *Ann Clin Biochem.* 2002;39:327.
- Levy S, Harris SK, Sherritt L, Angulo M, Knight JR. Drug testing of adolescents in ambulatory medicine: physician practices and knowledge. *Arch Pediatr Adolesc Med.* 2006;160:146-50.
- Pettie JM, Dow MA, Sandilands EA, Thanacoody HK, Bateman DN. An integrated care pathway improves the management of paracetamol poisoning. *Emerg Med J.* 2012;29:482-6.
- Rosell Ortiz F, Mellado Vergel FJ, Langa Valdivieso J, Lucena Serrano C, Gámez Cámara D, Ruiz Bailén M. Incorporación de la Troponina T en la evaluación extrahospitalaria del dolor torácico. *Emergencias.* 2005;16:4-11.
- Thanacoody HK, Good AM, Waring WS, Bateman DN. Survey of cases of paracetamol overdose in the UK referred to National Poisons Information Service (NPIS) consultants. *Emerg Med J.* 2008;25:140-3.
- Lesser RP, Sundaram M. Treat the patient, not the test. *Neurology.* 2003;60:534-5.
- Ballesteros S, Martínez MA, Ballesteros MA, de la Torre CS, Rodríguez-Borregan JC. A severe case of olanzapine overdose with analytical data. *Clin Toxicol (Phila).* 2007;45:412-5.
- Langford NJ, Martin U, Ruprah M, Ferner RE. Alternative venlafaxine kinetics in overdose. *J Clin Pharm Ther.* 2002;27:465-7.
- O'Donnell J, Bateman DN. Lamotrigine overdose in an adult. *J Toxicol Clin Toxicol.* 2000;38:659-60.
- Castanyer-Puig B, Barcelo-Martin B, Puiguriquer-Ferrando J, Rovira-Illamola M, Soy-Muner D, Nogue-Xarau S. Clinical value of estimated half-life in paracetamol poisoning as a complement to Rumack's nomogram. *Med Clin (Barc).* 2007;129:501-3.
- Isbister GK. How do we use drug concentration data to improve the treatment of overdose patients? *Ther Drug Monit.* 2010;32:300-4.
- Greene SL, Wood DM, Gawarammana IB, Warren-Gash C, Drake N, Jones AL, et al. Improvement in the management of acutely poisoned patients using an electronic database, prospective audit and targeted educational intervention. *Postgrad Med J.* 2008;84:603-8.
- Nogue Santiago, Puiguriquer Jordi, Amigó Monserrat. Indicadores de calidad para la asistencia urgente de pacientes con intoxicaciones agudas (Calitox-2006). *Rev Calidad Asistencial.* 2011;23:173-91.
- Touger M, Birnbaum A, Wang J, Chou K, Pearson D, Bijur P. Performance of the RAD-57 pulse CO-oximeter compared with standard laboratory carboxyhemoglobin measurement. *Ann Emerg Med.* 2010;56:382-8.
- Baker JE, Jenkins AJ. Screening for cocaine metabolite fails to detect an intoxication. *Am J Forensic Med Pathol.* 2008;29:141-4.
- Manchon M, Mialon A, Beryny C, Baltassat P. Value of the Remedi chromatography automate for the analytic diagnosis of drug poisoning. *Ann Biol Clin (Paris).* 1997;55:223-8.
- Wu AH, McKay C, Broussard LA, Hoffman RS, Kwong TC, Moyer TP, et al. National academy of clinical biochemistry laboratory medicine practice guidelines: recommendations for the use of laboratory tests to support poisoned patients who present to the emergency department. *Clin Chem.* 2003;49:357-79.
- Lidder S, Ovaska H, Archer JR, Greene SL, Jones AL, Dargan PI, et al. Doctors' knowledge of the appropriate use and route of administration of antidotes in the management of recreational drug toxicity. *Emerg Med J.* 2008;25:820-3.
- Wood DM, Hill D, Gunasekera A, Greene SL, Jones AL, Dargan PI. Is cocaine use recognised as a risk factor for acute coronary syndrome by doctors in the UK? *Postgrad Med J.* 2007;83:325-8.

Encuesta a *urgenciólogos* sobre el papel del laboratorio en el manejo de las intoxicaciones agudas

Castanyer Puig B, Puiguriguer Ferrando J, Barceló Martín B, Nogué Xarau S

Objetivo: Evaluar mediante una encuesta la percepción que los facultativos que atienden a pacientes intoxicados agudos tienen sobre el papel del laboratorio y conocer la importancia subjetiva que otorgan a determinadas pruebas para realizar el manejo clínico de las intoxicaciones agudas frecuentes.

Método: La encuesta se dirigió a *urgenciólogos* que trabajan en servicios de urgencias (SU) de dos hospitales con Unidades de Toxicología Clínica (UTC) y médicos asistentes a cursos de formación toxicológica. Se solicitaba: datos profesionales, grado de importancia atribuida a las pruebas del laboratorio para las diferentes etapas asistenciales, un máximo de tres pruebas fundamentales para el cuidado de 17 intoxicaciones agudas e indicar una determinación de analítica básica y que no se realizase en su laboratorio.

Resultados: Ochenta y ocho encuestas se consideraron válidas, de las cuales 69 (78%) se recogieron en cursos y 19 (22%) en 2 SU. La etapa asistencial a la cual los facultativos encuestados otorgan una mayor importancia al laboratorio es la etapa diagnóstica, independientemente del grupo al que pertenecen (62% si pertenecen a SU y 58% si asistieron a cursos). El papel del laboratorio es más relevante ($p < 0,05$) para aquellos médicos encuestados que trabajan en SU de los hospitales con UTC (52%) que para los de cursos de formación (26%). De las 17 intoxicaciones propuestas, los encuestados consideran como prueba analítica de primera opción el cribado de drogas de abuso en orina en las intoxicaciones por benzodiazepinas, antidepresivos tricíclicos y antidepresivos inhibidores de recaptación de serotonina (ISRS), heroína, GHB, éxtasis. Sólo existe como primera opción una prueba analítica específica cuantitativa para el tóxico causante de la intoxicación (carboxihemoglobina), en el caso de la intoxicación por humos. En todas las demás intoxicaciones las pruebas analíticas son inespecíficas.

Conclusiones: Los médicos encuestados corroboran que la finalidad principal del laboratorio de toxicología es la confirmación de la impresión diagnóstica en función de la clínica del paciente. [Emergencias 2012;24:447-453]

Palabras clave: Encuesta. Intoxicaciones. Laboratorio.