

Toxicologist and Medical Emergency Specialist: a new variant of the hermit crab

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Strategic alliances were invented a very long time ago. *Dardanus calidus*, better known as the hermit crab, decided to form an alliance with *Calliactis parasitica*, a type of sea anemone, thousands of years ago. This symbiosis benefits both species: the crab takes advantage of the anemone's stinging tentacles to defend itself against its worst enemy the octopus, while the anemone benefits from the crab's mobility.

The disciplines of Toxicology and Emergency Medicine have certain misfortunes in common; the most hurtful being that neither are medical specialities in Spain, although in other countries they are. The reasons for this are undoubtedly well-founded, but one gets the impression that successive Ministers of Health and sub-secretaries during the last century must never have had a health emergency requiring a phone call to 112 or a visit to the Emergency Department of any of our hospitals, nor ever have required attention for any sort of intoxication. In contrast, I imagine they have been anaesthetised, required the attention of urologists and gynaecologists and other specialists in as many as 49 different health-related conditions. The absence of speciality status in Toxicology and Emergency Medicine weakens both disciplines, and makes them attractive prey to other specialists and specialities, without anyone ever having demonstrated that this phagocytosis is beneficial for patients. It therefore seems reasonable to unite our forces against this predation.

Although we have no administrative cloak, those of us working in Emergency Departments know that emergencies exist, among which are toxicological events. The symbiosis therefore exists, but perhaps the time has come to give it a boost, and, especially to take advantage, not for our benefit (the specialists without a speciality) but for the patients we attend. And what should

be the name of this new type of hermit crab? The Functional Unit of Toxicology. In different Emergency Departments there are already precedents for this in other types of Functional Units (Chest Pain, Stroke, Heart Failure) and the results are satisfactory¹.

Although it is difficult to establish exactly when Emergency Medicine on the one hand and immediate Clinical Toxicology on the other came into being, we do know the date of their union: it was in November 1953, when the *Presbyterian-St Luke's Hospital* in Chicago inaugurated the first Toxicological Information Center (TIC) in the world, to better respond to queries arising from acute intoxications in the Paediatric Emergency Department. This model of TIC spread progressively to many countries, but not in the same way, predominantly with a hospital link (TIC joined to Emergency Departments, or to Intensive Care Units or Independent), although in Spain the first TIC (Madrid, 1971) was created and situated in premises belonging to the Ministry of Justice, thus reflecting the enormous influence that the branch of forensic medicine had and still has in the field of toxicology in our country, in comparison with that of clinical toxicological attention. With the passage of time, in some countries such as USA, clinical toxicology has become a sub-speciality of other specialities, like Emergency Medicine, Paediatrics or Preventive Medicine².

Faced with all this, clinical toxicology in Spain has progressively created its own niche in the hospital framework, more intensely so during the last 20 years. Exceptionally, certain hospitals (such as Hospital Clínic Barcelona) have an organic Section of toxicology within their Emergency Departments. Other hospitals are implementing a more functional, multi-disciplinary model of the Toxicology Unit, not incompatible with the for-

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DATE OF RECEIPT: 8-1-2008. **DATE OF ACCEPTANCE:** 17-4-2008. **CONFLICT OF INTEREST:** None.

mer, co-ordinated by Emergency Departments (Hospital de Son Dureta, Palma de Mallorca), the ICU (Hospital de Sant Pau, Barcelona), Internal Medicine (Hospital General Universitario, Valencia), Clinical Pharmacology (Hospital Río Hortega, Valladolid) or by the Laboratory of Toxicology (Hospital Clínico, Zaragoza). The heterogeneous dependency of these Functional Toxicological Units reflects a reality: intoxication is predominantly an acute event, often due to medicinal or other drug use, which usually requires toxicological analysis; the attendance circuit may start at the door of Emergency Department, make a stop at ICU or the department of Nephrology for dialysis, and end up in the department of Internal Medicine or Psychiatry.

The future direction seems to be towards these Functional Units of Toxicology, and there are epidemiological reasons to justify why they should be co-ordinated by Emergency Departments³. Without forgetting that ED physicians and nurses share the responsibility for attending these patients, toxicology is much more than treating emergencies; other professionals are equally necessary to optimize patient attention, including laboratory analysts, chemists, internal medicine or ICU staff, psychiatrists and others. Think too about the possible role of a Functional Unit of Toxicology in the case of a chemical catastrophe or terrorist attack using chemical weapons, with multiple victims⁴. Such Functional Units seem the ideal infrastructure, not only to improve the quality of patient attention but also to promote research and teaching in Toxicology, once again with the involvement of other specialists necessary to successfully carry out these complementary missions.

From the attendance point of view, the Clinical Toxicology Section of the Spanish Association of Toxicology has been the first scientific group to establish specific indicators of quality for intoxicated patient attention, with 24 indicators selected by consensus among ED physicians and nurses, clinical and analytic toxicologists, and ICU staff, set out in a document that could be the germinal guideline for establishing patient attention objectives for these multi-disciplinary Functional Units of Toxicology within the hospital framework⁵. A separate topic is accreditation of these Functional Units: should they be recognised and accredited by the hospital itself or by AET and/or SEMES? What criteria should be applied? How to evaluate their functioning? What qualifications would be required of the coordinator responsible for each Unit? These and many other questions, with their

corresponding answers, could well form part of another article of opinion in this journal.

The second important aspect of this symbiosis between toxicologists and ED specialists, also involving members of these Functional Units, is research. In fact, their alliance in this field has long been implemented. A study published last year in EMERGENCIAS analyzing the scientific publication by Spanish ED specialists during the last 30 years showed that toxicology was the 4th most prolific area (after internal medicine, intensive care and cardiovascular pathology, and before pharmacology, infectious diseases, gastroenterology, hepatology, surgery etc.) based on *Science-Citation Index* classification, and the most prolific if one uses the topic index of *Tintinalli's Textbook of Emergency Medicine*⁶. In this regard, it is important that both AET and SEMES maintain their respective Clinical Toxicology work groups, since they are vital for inducing and facilitating prospective and multi-disciplinary research projects^{7,8}.

Finally, in the field of teaching, the Clinical Toxicology-Emergency Medicine alliance could progress more visibly, especially in undergraduate tuition. There are post-graduate courses and now emerging Masters' courses with Emergency Department and Emergency Medicine as their main leitmotiv, including toxicological aspects. However, Clinical Toxicology is absent as a subject forming part the medical degree course offered by most universities; at most it an adjunct to "Legal Medicine" or "Legal and Toxicological Medicine", which once again shows the secular dependency of clinical toxicology on forensic science. But the undergraduate subject "Emergency Medicine" is even worse off; it is habitually not offered in the basic medical degree course, or now only timidly emerging as an optional subject at some Spanish universities.

Once and for all, consolidation of the symbiosis between Toxicology and Emergency Medicine is necessary, and largely in our hands. We should not forget that, for the hermit crab and the anemone, the alliance continues to do both of them a world of good.

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