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Commentary

Screening of Different Unknown Drugs in Blood Samples: Short Commentary

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Short Commentary

The primary question of this short communication could be a paradoxical not scientific ''why". But why? Maybe because, in our modern world, more and more screening of drugs is done in the army, in big companies, in schools, on the road, and so on [1]. The original and logical consequence of this augmentation of screening affects results: indeed, the more we investigate to find drugs, the more we find drugs. Therefore, it appears interesting to wonder the reason why a screening of drugs is being done, for what purpose and moreover, in which samples, urine or only in blood samples. Foremost, remember, that in principle, to get a good answer, we always need to ask the right question.

In medical and forensic toxicology, the analysis of substances used sometimes in therapeutic conditions or as drugs of abuse (DOA), often helps to answer three different questions: the first is to know if somebody has consumed a drug, for medical purpose to treat a disease or as DOA. The urine is and, has been until now, the preferred sample to screen unknown xenobiotics. Why? Simply, because of the greater detection windows due to the half-life of all different xenobiotics on the market. So, immunochemistry may help detecting substances consumption. If the test is positive, it is recommended by international guidelines and the good practice in laboratory, to always necessarily to confirm this positive result with another method, generally, an analysis with GC-MS or LC-MSMS method in urine. So, may come the second question which tries to know whether the patient is under influence of the detected substance. To answer this, a quantitative analysis of drug in blood will be necessary, again, by means of GC-MS or LC-MSMS. If the result of this analysis reveals active concentration, or therapeutic concentration, a facultative third interesting question, in medical as well as in forensic context, could be tested. It implies having information about the patient relationship with the drugs: is he/she a regular or occasionally consumer? To answer this question, hair is a good sample choice. But this is not the subject of this short communication.

Let's now speak about screening in blood. The development of high sensitivity method on LC-MSMS and the possibility to use less blood quantity (roughly a few drops of blood) on a Dried Blood Spot device (DBS) give both a better opportunity to use blood instead of urine . Besides, blood sample use for a screening and a quantitative analysis comes routinely in toxicology laboratory. In one run, it is possible to have information about consumption of drugs and in the same time the opportunity to find out about the state of influence with a quantitative analysis. In sum, less time is required with more information available. Just like a dream.

The screening of unknown drugs in blood could become a new paradigm in toxicology. Would we consider that urine is not necessary anymore? Why not. In fact, the choice of a sample helps, but is not the most fundamental element of toxicology work. One advantage of blood as a biomarker medium is its easy handling, avoiding any adulterated sample problem. Indeed, a substance could be invisible in urine, because of dilution, or adulteration with acids, soaps and so on. Thus, blood could become the right and best choice to investigate the consumption of DOA. Other blood sample's assets, upon using DBS, include its easy transport, its high stability and last but not least, its simple collection with finger pricks procedure. It would become now conceivable, to allow police officer to sample blood directly on the roadside or to see responsible for work drug-free place program in schools or in big companies to have an easy method to take blood.

Blood screening could become a new gold standard to analyse xenobiotics nowadays.

However, as suggested in the beginning of this communication, there is another point that must

be discussed: why should a screening of drugs be done? For law enforcement for sure, but to help addicts, does it really help ?

In a ''narco-society", is screening everyone who is, on a daily basis, under influence of different substances like, benzodiazepines, neuroleptics, antidepressant, cocaine, amphetamine, ritaline, cannabinoids and alcohol a good tool?

A positive screening test still doesn't explain the underlying reason why a person consumes a substance. Observing a symptom (a consumption of drug) is necessary, but, there is no known biological molecule that can be analysed in blood to understand the reason why a person consumes drugs. To help patients to quantitatively realize their consumption, a blood analysis could help. However, to drive a consumer on a new free road in the direction of a life without drugs, it seems to be more complicated.

In fact, a question has stayed unsolved since the beginning of humanity behind one word: pain. Some xenobiotics may be useful to overcome suffering and sometimes even further, may drive our brain in a world of fun and pleasure. But like Pinocchio in the pleasure island, where the only rule is total freedom, it was shown that pleasure was transforming kids into small donkeys, thus becoming slaves. The scientific name of this observation is called addiction. Therefore, a xenobiotic can help to diminish our sadness, our fear and aggressivity, but it will never erase the problem origin.

To finish this communication, here comes a short reflexion. Sometimes, people in general or patients suffering from psychological or physical diseases feel like pinned butterflies, crucified by pains, fears or doubts. To avoid this situation, they hope for finding a way to sedate their ill being in different types of xenobiotics. One can consider pharmaceuticals like a plaster on a broken leg. For sure, it can help. It can help regain our sight in the storm and remove the pin that keeps on the ground. But the desire to fly again and to go on with the path of our lives, will xenobiotics rekindle it?

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