



K10 Evaluation of Cases Admitted to Cukurova University Forensic Toxicology Laboratory From June 2009 to June 2014: A Retrospective Study

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After attending this presentation, attendees will better understand the gender, variety, and number of cases received per year to the Cukurova University Forensic Toxicology Laboratory in southern Turkey, which serves both the clinical and judicial fields.

This presentation will impact the forensic science community by informing attendees of the wide diversity of substances analyzed in the Cukurova University Forensic Toxicology Department.

Cukurova, with its historical name “Mediterranean”, covers Adana, Mersin, Osmaniye, and Hatay provinces and has geographical, economical, and cultural importance. One of the largest population densities of Turkey belongs this area with its seven million people. Throughout history, Cukurova has been an escape point from Europe to the Middle East, and the short transition point from North Middle East to Central Asia. It is also the center of transportation with its two main harbors.

Cukurova University Hospital is located in this region and provides service to surrounding subregions. Cukurova University Forensic Toxicology Laboratory is a unique academic unit that works in the field of forensic and clinic toxicology. Analysis of drugs of abuse, pesticides, volatile substances, and alcohol and carbon monoxide poisoning are performed in biological samples such as blood, urine, hair, and nails by using gas chromatography/mass spectrometry, liquid chromatography/tandem mass spectrometry, headspace gas chromatography, and ultraviolet spectrophotometry. Not only forensic samples but also routine hospital toxicology analyses are performed in this laboratory.

In this study, archives of cases received in this forensic laboratory during the period of June 2009-June 2014 were investigated. Cases were classified according to gender, applied unit, type of substances, and distribution of cases by year. Findings were statistically evaluated by the Statistical Package for the Social Sciences (SPSS) v20.0 software program.

After screening five years of data, it was determined that the number of cases gradually increased every year. A total of 865 cases were evaluated and it was found that 52.3 % of the cases admitted to the toxicology laboratory were clinical, 43.2 % were forensic samples, 2.8% were special request, and 1.7 % were from surrounding hospitals; 74.2 % were male and 25.8 % were female. Furthermore, it was found that 50.2 % of 452 clinical cases were from an emergency department, 22.3 % were from pediatric patients, 12.4 % were from psychiatry patients, 9.7 % from neurology, and the remainder were from other units of the hospital.

Of the 374 forensic cases received, 95.7 % were for drugs of abuse and 4.3 % were for alcohol. Tetrahydrocannabinol (THC) is the most widely determined substance in drug abuse cases and amphetamine and derivatives were commonly used in combination with THC.

Pesticide poisoning is also common due to one of the main sources of agriculture. Spraying for insects is carried out in March, April, and May in the region, so poisoning cases are more frequent in these months.

Carbon monoxide intoxication was more frequent in wintertime than in summertime due to household heating. The number of women who were exposed to carbon monoxide was greater than men, likely because women were much more frequently at home.

This study will present a retrospective study in terms of identification of cases received by Cukurova University Hospital Toxicology Laboratory.

Forensic Toxicology Lab, Demography, Cukurova University