

PREFACE

The technological advances in the last 10–20 years have resulted in rapid development of analytical methods. Nowadays, chromatographic methods, often coupled to mass spectrometry (GC/FID, HPLC, GC/MS, LC/MS, LC/MS/MS) dominate in forensic toxicological laboratories. These methods are characterised by much better selectivity and sensitivity than methods used in the past. Therefore, it is possible to investigate not only traditional materials such as body fluids (blood, urine) and specimens of internal organs (stomach, liver), but also alternative ones such as hair, saliva (oral fluid), sweat, skin, nails, bones, teeth, vitreous humour, meconium, colostrum and other materials. This allows us to significantly broaden the range of toxicological investigations. Examinations of alternative materials are also performed in Polish toxicological laboratories, where the developed methods are used more and more frequently in routine analyses. Therefore the organisers of XXIII Annual Meeting of Polish Forensic Toxicologists decided that the main themes of the conference would be alternative materials and alternative methods in forensic toxicological analysis.

The XXIII Annual Meeting of Polish Forensic Toxicologists was held in Świnoujście by the Baltic Sea on 18–19 May, 2006. It was organised by the Professor Jan Sehn Institute of Forensic Research in Krakow together with the Department of Forensic Medicine of the Pomeranian Medical Academy in Szczecin. About 80 persons attended the meeting, including toxicologists and medical doctors from departments of forensic medicine and toxicology departments of hospitals, and analysts from police laboratories. In addition to the main themes, the conference programme also included, as is the tradition, reports on current research work and expert studies.

A methodological and analytical workshop was organised before the conference, its main theme being the applications of infrared spectrometry in toxicology.

The conference began with an introductory lecture given by Dr. Maria Kała (Institute of Forensic Research) on alternative materials and methods in forensic toxicological analysis. The first session, which was devoted to alternative materials, encompassed nine papers. First, Sebastian Rojek (Collegium Medium, Jagiellonian University, Krakow) and Małgorzata Albert (Silesian Medical Academy, Katowice) assessed the usefulness of hair and meconium analysis for medico-legal purposes. The next authors gave presenta-

tions on the analysis of different substances in alternative materials, such as haloperidol in nails by LC-MS, trazodone and its metabolite 1-(3-chlorophenyl)piperazine (mCPP) in hair by HPLC-ESI-MS, THC in oral fluid by GC-MS-NCI, nicotine, cotinine and caffeine by HPLC-UV-DAD. Next, the devices used for screening analysis for drugs in oral fluid were presented. The last two presentations in the first session concerned ethyl alcohol, its stability in vitreous humour and positive readings of evidential alcohol breath analysers in the presence of acetone in expired air. The latter aroused a lot of controversy, which will be discussed in one of the next issues.

The second session was devoted to alternative methods. First, the changes in biochemical profile of urine of chronic amphetamine and opiate users analysed by H NMR spectroscopy were presented. Then, determination of amphetamines in blood by the enzyme-linked immunosorbent assay (ELISA) was described. The remaining presentations concerned identification of dental materials by means of infrared spectrometry and improvements in modern analytical methods, such as capillary electrophoresis (CE) and LC-MS.

As is the tradition, after presentations relating to the main theme of the conference, reports on current studies and expert practice were given. The first three were prepared by a research group from the Medical Academy in Lublin and concerned the changes in ketones concentrations during intraoperative hypothermia, the use of the acetone/ -hydroxybutyrate ratio in medicolegal diagnosis of sudden deaths and metabolic interaction *in vitro* between cyclohexanone and ethanol in homogenates of human livers. Next, a presentation on correction of urine drug concentration by dividing it by the concentration of excreted creatinine and also correlation with body drug concentration was given. The last two presentations concerned the toxicology of inorganic compounds, their topic being potassium as a toxic element and serious poisonings by sodium and potassium fluosilicate.

The second day of the conference started with a lecture by Prof. Anna Machoy-Mokrzyńska (Pomeranian Medical Academy) on cell changes occurring after consumption of psychoactive substances. Next, the presentations on abstinence assessment among patients of a drug dependence treatment centre, and tianeptine in medicolegal practice were given, followed by a case report on a fatal poisoning with vinblastine. Among other

papers presented during this session, presentations on toxicological diagnostics of drugs whose side effects are exploited to induce abortions, and on an investigation into the composition of Chinese “herbal” slimming drugs, aroused particular interest. Moreover, a PCI-GC-MS method for gamma-hydroxybutyric acid (GHB) determination in urine, a GC-MS method of identification of psilocybine and psilocyne present in hallucinogenic mushrooms (*Psilocybe*) and an LC-MS-APCI method for atropine and scopolamine determination were described. 1-(3-chlorophenyl)piperazine (mCPP), a new synthetic drug that is still a legal substance, was discussed. The conference finished with a comparison of legal regulations in different European countries concerning “possession for personal use” and “great amounts” of psychotropic substances and narcotic drugs and a presentation of the certificate of accreditation awarded to the police laboratory in Warsaw.

The Prof. J. Markiewicz and Prof. T. Borkowski Award was given for the first time at this conference, honouring the best young scientist (the candidate must not be above 40 years of age). All participants in the conference voted by secret ballot. The winner was Sebastian Rojek from the Collegium Medium, Jagiellonian University, Krakow.

A total of thirty-three papers were presented at the XXIII Conference of Forensic Toxicologists. It was an excellent opportunity to present reports from performed research projects and expert practice. Despite a very tight schedule, participants engaged in content-related discussions. Some of the papers read out during the conference have been included in *Problems of Forensic Sciences*, issue LXVI.

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