



Scientific Tracks & Abstracts



Sessions

Toxicology | Environmental Toxicology | Aquatic Toxicology | Medical Toxicology

Session Chair

Alan H Hall

University of Colorado Denver, USA

Session Co-Chair

Laurence Mathieu

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Session Introduction

Title: Protective effect of Baicalein alone and co-administered with Losartan on Doxorubicin-induced Nephrotoxicity in rats

Ziad H Al-Oanzi | Jouf University | Saudi Arabia

Title: Updated easiest and accurate confirmation of early pregnancy during Autopsy

Neelam Shrivastava | Gandhi Medical College | India

Title: Utility of lipid sink in treatment of Refractory acquired Methemoglobinemia: A case report

Anuj Khatri | Sri Ganga Ram Hospital | India

Title: Deltamethrin induced changes in endocrine glands & ionic balance in *Heteropneustes fossilis*

Suresh Kumar | CRM Jat College | India

Prem Bugasara | SRBM Govt. College | India

Title: Prenatal exposure levels of Polybrominated diphenyl ethers in mother-infant pairs and their transplacental transfer characteristics in Uganda (East Africa)

Patrick Ssebugere | Makerere University | Uganda

2nd International Conference on

TOXICOLOGY AND CLINICAL TOXICOLOGY

November 11-12, 2019 | London, UK

Protective effect of Baicalein alone and co-administered with Losartan on Doxorubicin-induced Nephrotoxicity in rats

Ziad H Al-Oanzi

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Doxorubicin (DOX) is a widely used antineoplastic drug with several toxic effects. We investigated the protective effect of co-administration of Baicalein (BL; a flavonoid) and losartan (LT; angiotensin receptor blocker) on DOX-induced nephrotoxicity. Male Wistar albino rats were divided into these seven groups (n=6): 1) Control group; 2) DOX group; 3) DOX+BL group (BL, 10 mg/kg/day); 4) DOX+LT group (LT, 7 mg/kg/day) and 5) DOX+LT+BL(10) group. After two weeks of LT and BL treatment, a dose of DOX was administered. Serum renal markers such as creatinine and urea levels were significantly ($P < 0.001$) elevated in DOX challenged group compared to normal animals. Renal pro-inflammatory cytokines including tumour necrosis factor- α (TNF α), interleukin (IL-1 β and IL-6) levels were significantly ($P < 0.001$) increased while an anti-inflammatory cytokine IL-10 levels were markedly ($P < 0.001$) increased in DOX challenged group compared to controls. Oxidative stress biomarkers including thiobarbituric acid reaction substances (TBARS) and glutathione (GSH) in renal cells were significantly ($P < 0.001$) increased and decreased compared to control group respectively. Enzymatic activities of superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx) and glutathione-S-transferase (GST) in renal cells were significantly ($P < 0.01$) decreased in DOX challenged rats compared to normal. In addition, renal protein expressions and inflammatory activities of caspase-3, n-nitric oxide synthases (nNOS), inducible nitric oxide synthase (iNOS), endothelial nitric oxide synthase (eNOS) and nuclear factor kappa-B (NF- κ B) p65 were significantly ($P < 0.001$) increased in DOX challenged rats when compared to control animals. While the DOX-induced increase in serum renal markers, pro-inflammatory cytokines and biomarkers was alleviated by BL and/or LT treatment and showed the most potent protective effects. Our study demonstrates remarkable anti-oxidative and anti-inflammatory effects of BL and LT in rodents challenged with DOX.

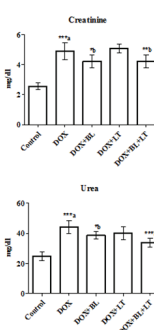


Figure 1: Effect of baicalein (BL) and/or losartan (LT) on doxorubicin (DOX)-induced changes in serum levels of creatinine and urea. Data were expressed as Mean±S.D. (n=6) and analyzed using one-way ANOVA followed by Student-Newman-Keuls as post hoc test. ^a Control vs DOX group, ^b DOX vs DOX+BL or DOX vs DOX+LT or DOX vs DOX+BL+LT. P values consider significant when ^{*}P<0.05, ^{**}P<0.01 and ^{***}P<0.001.

Biography

Ziad H Al-Oanzi has graduated from Institute of Cellular Medicine, The Medical Science University of Newcastle (UK), has PhD was focusing on The role of the hexosamine biosynthesis pathway in control of hepatic glucose metabolism. His current research interests are biochemistry of liver, glucose and glycogen metabolism, metabolism control in gene expression, inflammation and antioxidants. He is working as an assistant professor at the Jouf University, College of Applied Medical Science, Sakaka, Saudi Arabia.

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Updated easiest and accurate confirmation of early pregnancy during Autopsy

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One of the causes, for suicide in young and unmarried females is illegal relationship which turns into pregnancy and due to failure of relationship to hide the shameful condition and guilty, female commits suicide. Sometimes during autopsy, misdiagnosis of pregnancy cause embarrassing condition to parents and on the other side, if finding is not detected which leads escape of accused from punishment. Therefore, an accurate test of pregnancy is essential. In prevailing practice, size of uterus and corpus luteum is compared with non pregnant uterus for diagnosis of pregnancy but in early pregnancy, size of uterus and corpus luteum doesn't increase considerably and findings usually missed.

The proposed method is easiest and confirmatory test for the same which is done by examining urine or blood serum for HCG (Human Chorionic Gonadotrophin) of deceased by HCG strip.

Biography

Neelam Shrivastava has completed MBBS in 1988 from Indore University, India and LLB from Bhopal University, India in 1999. She has worked in Public Health department as Assistant Surgeon till 1996 and since last 22 years, she is working as a Senior Medical Officer in Medico Legal Institute, Gandhi Medical College, India. There she has performed more than 5000 autopsies of different nature and given expert opinion. She has also presented five international papers.

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Utility of lipid sink in treatment of Refractory acquired Methemoglobinemia: A case report

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Methemoglobinemia can be congenital or acquired. Acquired methemoglobinemia occurs as a result of ingestion of some substances such as toluene, nitrates. Patient presents with cyanosis which is not explainable by the respiratory or cardiac cause. Most frequently used drug in treatment is methylene blue. We report a case of a patient with severe acquired methemoglobinemia in 14 months old baby, due to ingestion of toluene. He was cyanosed which was refractory to oxygen therapy and without any cardiac and respiratory disease. He had persistent high levels of methemoglobin, despite giving multiple doses of methylene blue and exchange transfusion. Finally, methemoglobin levels were controlled by automated RBC exchange transfusion and intralipid infusion.

Biography

Anuj Khatri is working as a PICU Consultant in a tertiary care hospital in New Delhi. He is involved in the management of critically ill children admitted in Pediatric Intensive Care Unit, Cardiac Intensive Care Unit and transplant ICU. While working in PICU, he has been a part of the team who have managed different poisonings amongst children.

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Deltamethrin induced changes in endocrine glands & ionic balance in *Heteropneustes fossilis*

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Deltamethrin, a synthetic pyrethroid contaminating aquatic ecosystems as a potential toxic pollutant, is investigated in the present study. The impact of exposure of the freshwater fish *Heteropneustes fossilis* to two sub lethal concentrations (0.07mg/L and 0.14 mg/L) of deltamethrin for 30 days on the physiological activities of endocrine glands Ultimobranchial gland, Corpuscles of Stannius, Prolactin cells, Na⁺/K⁺ ATPase, Ca²⁺ and Mg²⁺ ATPase and inorganic ions Na⁺, K⁺, Ca²⁺ and Mg²⁺ in brain, kidney, gills, muscle and intestine was assessed. Significant (p<0.01) decrease was found in Na⁺/K⁺ ATPase, Ca²⁺ and Mg²⁺ ATPase activities in fish exposed to higher concentration. Ionic levels in vitals tissues were significantly decreased after exposure to the two sub lethal concentrations. Endocrine gland viz. ultimobranchial gland, corpuscles of stannius, prolactin cells, Brain and intestine were the most affected tissues.

Biography

Suresh Kumar completed Ph.D in Toxicology from Industrial Toxicology Research Centre (CSIR-ITRC), Lucknow. He was awarded JRF-CSIR fellowship and awarded Gold Medal for contribution in environmental biology by the Academy of environmental Biology in 2016. He has published many research papers in International/ National reputed Journals and authors of four books and visited abroad like USA, UK and Port Louis to attend International Conferences to present research papers and invited talks. He has 20 years research & teaching experience in Environmental and Occupational Health field and to develop an educational program. At present he is working in Zoology dept., to teach & guide undergraduate and post graduate students. At the same time he is also engaged in research activities to complete many major and minor research projects funding from various agencies related to EIA & Toxicology. During 2004 he has worked as Commonwealth Service Abroad Programme, London as an expert in Port Louis, to carry out an assignment on EIA. He is an expert in analysis of health hazards and toxicology effect on living being & Trained in modern molecular techniques, histopathology, biochemical and molecular in aquatic animals.

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Prem Bugasara is working as an associate professor, department of zoology, Shri Baldev Ram Mirdha Government College, Nagaur, Rajasthan. He has been associated with profession for 16 years. He was awarded Ph.D degree from Maharaja Ganga Singh University, Bikaner for research work on blackbucks. He is passionately engaged in biodiversity conservation and has conducted several seminars and awareness programs to encourage people to protect native flora and fauna. He always tries to improve society and youth by discussing various social issues. He has completed a research project on wildlife conservation and assessment of biodiversity in Rotu Conservation Reserve, Nagaur (Rajasthan) in year 2016-17 and is continuing with another wildlife research project. He has published research papers on various topics in national and international journal.

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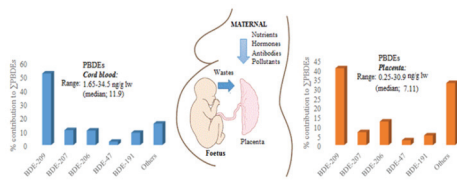
Prenatal exposure levels of Polybrominated diphenyl ethers in mother-infant pairs and their transplacental transfer characteristics in Uganda (East Africa)

Patrick Ssebugere

Makerere University, Uganda

Polybrominated diphenyl ethers (PBDEs) are ubiquitous environmental pollutants with adverse effects on the fetus and infants.

The aim of the present study was to assess in utero exposure levels and transplacental transfer characteristics of BDE congeners in mothers from Kampala capital city, Uganda. Paired human samples (thirty placenta and twenty nine cord blood samples) were collected from mothers at St. Francis Hospital Nsambya between April and June, 2018 and analysed for a suite of 24 tri- to deca-BDE congeners. Extraction was carried out using liquid-liquid extraction and sonication for cord blood and placenta samples, respectively. Clean-up was done on a solid phase (SPE) column and analysis was performed using gas chromatography/mass spectrometer (GC/MS). Total (Σ) PBDEs were 0.25-30.9 ng/g lipid weight (lw), (median; 7.11 ng/g lw) in the placenta and 1.65-34.5 ng/g lw (median; 11.9 ng/g lw) in cord blood serum. Statistical analysis showed no significant difference between the levels of PBDEs in cord blood and placenta samples (Wilcoxon signed rank test: $Z = -0.433$, $p = 0.665$), possibly due to poor xenophobic metabolism by the fetus. BDE-209 was the dominant congener in both matrices (contributed 40.5% and 51.2% to Σ PBDEs in placenta and cord blood, respectively), suggesting on-going maternal exposure to deca-BDE formulation. No apparent correlation was observed between BDE congeners and meat consumption probably due to multiple sources of PBDEs. Based on absolute concentrations, the extent of transplacental transport (TPT) was high for higher congeners (BDE-209, 206 and 207) than for lower ones (such as BDE-47) suggesting alternative TPT mechanisms besides passive diffusion.



Biography

Patrick Ssebugere completed his D.Sc in Green Chemical Technology from Lappeenranta University of Technology in 2015. He is a Lecturer of Physical Chemistry at the Department of Chemistry, School of Physical Sciences, Makerere University. He has published more than 17 papers in reputed journals and has supervised more than 8 master's students to completion. His research group is involved in modeling and risk assessment of organic pollutants in the tropics. The group is also studying the prevalence and fate of organic chemical contaminants in the environment, their sources and climate change-energy-public health nexus and sustainability of ecosystems.

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Variation in oxidative stress parameters after subchronic exposure to a Lambda cyhalothrin pesticide in Wistar rats

Abderraouf Ayachi

University of Tebessa, Algeria

Lambda cyhalothrin is a synthetic pyrethroid insecticide, which is increasingly used in agriculture and home pest control. Our experimental study was carried out on 18 male WISTAR rats (*Rattus rattus*) divided into three groups: group A (06 rats) control, group B (06 rats) treated with LCT (05 mg / kg / day), group C (06 rats) treated with LCT (10 mg / kg / day) administered orally for 90 days. The present work involves the evaluation of the potential toxicity of LCT on the kidneys of rats and the variation of some oxidative stress parameters. The results obtained after the administration of LCT show that it has caused a generally prooxidizing effect, this is revealed by the reduction of the reduced glutathione level GSH and the enzymatic activity of the glutathione peroxidase GPx and catalase CAT in the kidneys and also by increasing the enzymatic activity of glutathione-S-transferase GST and the level of MDA in treated rats with different doses compared to controls. All of these results are signs of possible nephrotoxicity.

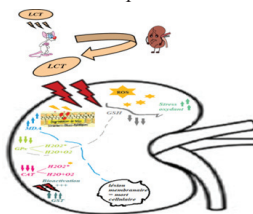


Figure: General presentation concludes the nephrotoxic effects of Lambda cyhalothrin on rat

Biography

Abderraouf Ayachi has a BA and MA in Applied Toxicology from the Faculty of Exact Sciences and Nature and Life Sciences, University of Tebessa, Algeria as well as a Biologist in the Laboratory of the Mother and Child Hospital in Tebessa, Algeria. He has a great desire to develop his knowledge in the field of scientific research and gain more experience.

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The impact of Lambda cyhalothrin insecticide on the parameters and chemical metabolites in the kidneys of Wistar rats

Guefaifia Yahia

University of Tebessa, Algeria

Lambda cyhalothrin is a synthetic pyrethroid insecticide type II, with increasing agricultural uses. This active substance consists of two of the four enantiomeric forms of cyhalothrin. This study was carried out on a group of rats (18 rats) treated with LCT (05 mg / kg / day), group C (06 rats) treated with LCT (10 mg / kg / day) orally for 90 days. This work is for the evaluation of the potential toxicity of LCT on the kidneys of rats and the variation of certain biochemical parameters and metabolites. The results obtained after administration of LCT show that it caused an increase in urea and creatinine also a disturbance of the main macromolecules namely proteins, lipids in treated rats with this two doses compared to controls. All of these variations are signs of the toxicity of this insecticide to the kidneys of Wistar rats.

Biography

Guefaifia Yahia completed his bachelor diploma in animal biology and physiology and his master diploma in animal Ecophysiology from Tebessa University. He is now working as a pharmacist.

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