SCIENCE OR FICTION

Imagine the Future of Medicine

Abstract Book

26th European Students' Conference
Berlin, September 23rd – 26th, 2015

CHARITÉ
UNIVERSITÄTSMEDIZIN BERLIN

Nephrology / Urology

849 APPLICATION OF LC-MS/MS METHOD FOR QUANTITATIVE ANALYSES OF UREMIC TOXINS, P-CRESOL SULFATE AND INDOXYL SULFATE IN SALIVA

ESC ID	849
Name	Sankowski Bartłomiej
University	Medical University Of Warsaw
Country	Poland
Co-Author(s)	Natalia Korytowska, Joanna Giebułtowicz, Piotr Wroczyński

TITLE: APPLICATION OF LC-MS/MS METHOD FOR QUANTITATIVE ANALYSES OF UREMIC TOXINS, P-CRESOL SULFATE AND INDOXYL SULFATE IN SALIVA

INTRODUCTION: p-Cresol sulfate (pCS) and indoxyl sulphate (IS) are uremic toxins which concentration in serum correlates with the stage of the renal failure. They are also related to an increased risk of cardiovascular disease and their complications. Hence these substances should be monitored to prevent the progress of the disease and its negative outcomes. Excellent material for this goal could be saliva. Saliva might be an alternative to blood test, because of its advantages like accessibility and easy collection. Our team developed and validated a new LC-MS/MS method for analysis of pCS and IS in saliva Thus, the aim of this study was the application of a new, repeatable and reproducible LC-MS/MS method for analysis of these toxins in saliva samples. Additionally, the influence of salivary flow and the type of swab in the Salivette device was examined.

METHODS: The material for the study was saliva from 70 healthy volunteers, aged 16 to 89 years. To estimate the possible retention of the toxins on swabs, the cotton and the synthetic swab was incubated in pooled saliva samples of known concentration of the toxins. To evaluate the influence of salivary flow stimulated and resting saliva were collected from 9 healthy people, aged 20 to 62 years. Concentrations were determined using the mass spectrometer QTRAP®4000 (AB SCIEX, Framingham, Massachusetts, U.S.).

RESULTS: The concentration of pCS and IS in saliva was significantly lower in the group <65 years than in the group ≥65 years, accordingly: ($p < 0.0001$) and ($p = 0.0498$). No influence of salivary flow nor type of swab was detected.

CONCLUSION: The new LC-MS/MS method can be used for the determination of pCS and IS in human saliva. The results encourage the application of saliva as a research material in monitoring the toxins level in the organism. However, further researches are necessary.