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International Conference on

NEPHROLOGY AND UROLOGY

November 21-22, 2018 | Madrid, Spain

DAY 1

Scientific Tracks & Abstracts

Day 1

SESSIONS

November 21, 2018

Dialysis | Treatment of Kidney Diseases

Session Introduction

Session Chair

Gorgaslidze N
TSMU Iovel
Kutateladze Institute of
Pharmacochemistry, Georgia

Title: **The relation between diabetes and dementia in patients undergoing dialysis**

Aikaterini Nouri, Alexander Technological Educational Institute of Thessaloniki, Greece

Title: **Gastrorenal axis in the control of body sodium homeostasis**

Jose Pedro A, The George Washington University School of Medicine & Health Sciences, USA

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THE RELATION BETWEEN DIABETES AND DEMENTIA IN PATIENTS UNDERGOING DIALYSIS

Aikaterini Nouri
Alexander Technological Educational Institute of Thessaloniki, Greece

Introduction and Aims: End-stage renal disease (ESRD) patients, undergoing maintenance hemodialysis often suffer from depression and dementia. However, the relation between diabetes and depression and/or dementia to those patients has not yet been efficiently examined. Purpose of the study was to investigate the effect of diabetes on depression and dementia in a population of chronic ESRD patients undergoing maintenance dialysis.

Methods: 53 patients (mean age 69.57±13.02 years, 15 male / 38 female) undergoing maintenance thrice-weekly dialysis for 28.34±56.36 months were included in the study. 27 of them had established diabetes mellitus. During a dialysis session, all patients were interviewed using the standardized questionnaires "Mini Mental State Examination" (MMSE) and "Hospital Anxiety and Depression Scale" (HADS) to determine the level of depression and dementia. Fasting blood samples were taken in order to determine hemoglobin levels, dialysis adequacy (determined by kt/V) and serum levels of sodium, potassium, calcium and phosphorus. Inflammation status was assessed by serum levels of C-reactive protein (CRP).

Results: The level of depression and dementia for the total of our population was defined as moderate (13.91±10.56 and 15.00±5.49 degrees respectively). Diabetics showed significantly higher depression level than non-diabetics (17.63±10.63 vs 10.04±9.15 respectively, $p<0.05$). Although dementia level was assessed as moderate for the total of our population, non-diabetics presented significantly lower dementia level than diabetic patients (13.19±5.19 vs 16.88±5.23 respectively, $p<0.05$). In the non-diabetic group there was a significant difference of depression level among sexes (men 8.79±7.70 vs women 13.43±12.35, $p<0.05$). However, there was no difference of dementia levels among men and women. CRP circulating levels were correlated with dementia ($r=0.487$, $p<0.05$), while no association was found between CRP and depression. In diabetics, no relation between dementia/depression and gender or CRP levels was established.

Conclusions: ESRD dialysis patients suffer from moderate depression and dementia. In those patients, depression is closely related with the presence of diabetes. In non-diabetic dialysis patients we found a strong association of female gender and depression status and high inflammatory status with dementia.

BIOGRAPHY

Aikaterini Nouri has completed her MSc at the age of 25 years from Alexander Technological Educational Institute of Thessaloniki and post nursing studies also from Alexander Technological Educational Institute of Thessaloniki. She is editor of essay with title "The relation between diabetes and dementia for patients undergoing dialysis". At the 9th European nursing conference which held in Heraklion, Crete, Greece, she has presented a diabetic related essay.

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Jose Pedro A, J Clin Nephrol Ther 2018, Volume 2

GASTRORENAL AXIS IN THE CONTROL OF BODY SODIUM HOMEOSTASIS

Jose Pedro A
The George Washington University School of Medicine & Health Sciences, USA

Organ to organ communication is important in the maintenance of normal fluid and electrolyte balance and blood pressure (BP). The gastrointestinal tract and the kidney are major organs involved in this process. Neural mechanisms and gut hormones mediate the natriuresis of an oral sodium load. The flow of sodium into the sodium channels of the stomach antrum activates a sequence of events, leading to G-cell-mediated increase in gastrin secretion and its release into the circulation. Of all the gut hormones circulating in the plasma, gastrin is the one that is reabsorbed to the greatest extent by renal tubules. Gastrin, via its receptor, the cholecystokinin type B receptor (CCKBR) in the kidney inhibits renal sodium transport. Germline deletion of gastrin (*Gast*) or *Cckbr* gene in mice causes salt-sensitive hypertension. Selective silencing of *Gast* in the stomach and duodenum in mice impairs their ability to excrete an oral sodium load and increases BP. Thus, the gastro-renal axis, mediated by gastrin, can complement pronatriuretic hormones, such as dopamine, produced by the kidney in response extracellular fluid volume expansion, to increase sodium excretion after an oral sodium load. However, BP is not increased in patients who have had gastric bypass. Indeed, the high BP can be normalized by gastric bypass because of the release of other enterokines. Sleeve gastrectomy actually enhances the increase in plasma gastrin following a mixed meal. By contrast, Roux-en-Y gastric bypass surgery prevents the increase in plasma gastrin following a mixed meal but either type of bypass surgery increases plasma levels of natriuretic enterokines, such as glucagon-like peptide-1 (GLP-1). Gastrin, acting on renal CCKBR, GLP-1, acting on its receptor GLP-1R, also in the kidney, and dopamine produced in the kidney, acting on D1 dopamine receptors interact to negatively regulate renal sodium transport and keep the BP in the normal range.

BIOGRAPHY

Jose Pedro A received his MD degree, magna cum laude, meritissimus, from the University of Santo Tomas Philippines, and placed first in the Philippine National Board Examinations in Medicine and Surgery. He received his PhD degree in Physiology from Georgetown University, Washington, DC, USA. The primary goal of Jose's research is to determine the genetic and pharmacogenetic bases of human essential hypertension and the metabolic syndrome. He has published more than 380 scientific articles in book chapters and journals. Jose has received several academic and research awards, including the 2003 Lewis K. Dahl Memorial Lecture (American Heart Association), 2007 Ernest H. Starling Distinguished Lecture (American Physiological Society) and 2015 Excellence Award for Hypertension Research (American Heart Association). A key finding of Jose's research is the demonstration of the crucial role of gene variants of GRK4 in the pathogenesis and personalized treatment of hypertension.

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DAY 2

Scientific Tracks & Abstracts

Day 2

SESSIONS

November 22, 2018

Clinical and Pediatric Nephrology | Nephrology

Session Introduction

Session Chair

Viachaslau Barodka
Johns Hopkins University
USA

Title: **Controversy in the management of febrile urinary tract infections in infant and toddlers**

Pinhas Geva, Michigan State University, USA

Title: **Effect of calcium and magnesium high content in hardness drinking water on kidney functions**

Roman Aizman, Novosibirsk State Pedagogical University, Russia

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Pinhas Geva, J Clin Nephrol Ther 2018, Volume 2

CONTROVERSY IN THE MANAGEMENT OF FEBRILE URINARY TRACT INFECTIONS IN INFANT AND TODDLERS

Pinhas Geva
Michigan State University, USA

The American Academy of Pediatrics had published its most current guidelines for the diagnosis and treatment of initial UTI in infants and children 2 to 24 months of age in August of 2011. The guidelines left significant ambiguities related to the role of imaging, antibiotic treatment and follow up. Significant controversy arose from deviation from prior practice of offering antibacterial prophylaxis for children diagnosed with vesicoureteral reflux. Subsequently, a study comparing prophylaxis to placebo was published in may of 2014 (Antimicrobial Prophylaxis for Children with Vesicoureteral Reflux The RIVUR Trial Investigators) attempted to resolve the controversy, however, it has not been endorsed by all professional societies, leaving the practicing Pediatrician to tailor treatment without firm, well-accepted guidelines.

BIOGRAPHY

Pinhas Geva had completed his medical education at the Sackler School of Medicine in Tel Aviv, Israel. After completing residency, completed Pediatric Nephrology Fellowship at University of California, Los Angeles and assumed junior faculty position at Albert Einstein College of Medicine in July of 1987. He joined the faculty at Michigan State University in July of 1997 and remained active in patient care and residents, student's education.

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Roman Aizman et al., J Clin Nephrol Ther 2018, Volume 2

EFFECT OF CALCIUM AND MAGNESIUM HIGH CONTENT IN HARDNESS DRINKING WATER ON KIDNEY FUNCTIONS

Roman Aizman, Svetlana Nedovesova and **Eugene Trofimovich**
Novosibirsk State Pedagogical University, Russia

The effects of prolonged consumption of hardness drinking water with increased content of Mg^{2+} and Ca^{2+} on renal functions in rats were studied. The experiments were performed on Wistar male rats of 3 groups: control (C) (Ca^{2+}-10 mg/L and Mg^{2+}-5 mg/L), and experimental – E1 (Ca^{2+}-120mg/L) and E2 (Mg^{2+}-60mg/L). At the 1-st, 2-d, 4-th and 6-th months of water intake in rats the urine and blood samples were collected before (background) and after a 5% water load. The concentrations of Na^{+}, K^{+}, Ca^{2+}, Mg^{2+}, urea, osmolality and hormones (corticosterone, T3 and T4) were determined. It was shown that both experimental groups an activation of osmoregulatory renal function compared with the control have manifested, that was to reduce urine output by increasing of fluid reabsorption, the osmolality of the urine, the excretion of Ca^{2+} and reducing potassium and magnesium excretion. The output of Na^{+}, urea practically did not differ between groups. Drinking water in group E2 caused more significant changes in renal function than water in group E1. After the water loading differences in renal response between the groups were not expressed, especially to the 6-th month, indicating a decrease in the level of stress of the osmotic and ion - regulating mechanisms after hydration. The concentration of the described ions in plasma did not differ between groups, and the content of the main stress hormones (corticosterone, thyroxine, triyiodothyronine) responsible for adaptive adjustment of the organism by the end of the observation was significantly lower than in the group C, which is likely to indicate a manifestation of a stress reaction to hardness drinking water with its subsequent depletion. Thus, long-term intake of drinking water with high content of Mg^{2+} and Ca^{2+} causes adaptive adjustment of hormonal and renal responses, the value of which depends on the concentration of ions in the water and the consumption time duration.

BIOGRAPHY

Roman Aizman has got his Doctor degree from Moscow Research Institute of Developmental Physiology in 1985. He is the head of the dept. of Human Anatomy, Physiology and Life Safety, director of the Scientific Research Institute of Health and Safety, professor of Novosibirsk State Pedagogical University, Russia. He has over 700 publications that have been cited over 3900 times, and his publication H-index is 26.

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