איבי ISNH

האיגוד הישראלי
לנפרולוגיה ויתר לחץ דם
THE ISRAELI SOCIETY OF
NEPHROLOGY AND HYPERTENSION

The 50th Conference of the Israeli Society of Nephrology and Hypertension

April 24th - 26th, 2014

Maale Hachamisha Hotel

Abstracts

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Scientific Committee

Chairman of the Scientific Committee

Dr Gil Chernin, Tel-Aviv Surasky Medical Center

Scientific Programme

Thursday, April 24th

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Gil Chernin – Chairman, Scientific Organizing Committee
Eliezer Golan – Meir Medical Center

13:35 - 13:50 **ISRAEL RENAL REGISTRY - ANNUAL REPORT**
Eliezer Golan, Dept. of Nephrology & Hypertension, Meir Medical Center

SESSION 2 - Chairs: Doron Schwartz, Sydney Benchetrit

13:50 - 14:50 FREE COMMUNICATIONS: CLINICAL NEPHROLOGY

13:50 **DIETARY THERAPY FOR CHILDREN WITH CONGENITAL SOLITARY FUNCTIONING KIDNEY**
Ze'ev. Katzir[1], Sarah Blumberg[1]
[1]Institute of Nephrology, E.Wolfson Medical Center, Holon.

14:00 **THE SPECTRUM OF RENAL DISEASE IN KIDNEY BIOPSIES OF DIABETIC PATIENTS**
Yael Einbinder[1], Debbie J. Goodman[2], Isabelle Haggiag[1,2], Tania Zahavi[1,2],, Sydney Benchetrit[1,2],
[1]Department of Nephrology and Hypertension, Meir Medical Center, Kfar Saba, Israel; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

14:10 **ANTI-PLA2R (ANTI PHOSPHOLIPASE A2 RECEPTOR): THE ANCA OF MEMBRANOUS NEPHROPATHY?**
Nomi Levin-laina[1], Alex Wolkov[2], Boris Gilburd[3], Dganit Dinour[1,4], Eli J.Holtzman[1,4]
[1]Nephrology and Hypertension Institute; [2] Pathology Institute; [3]Hematology Institute; all in Sheba Medical Center, Tel-Hashomer; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

14:20 **MULTIPLE SCHEDULE SPOT URINE COLLECTION FOR THE EVALUATION OF 24-HOUR EXCRETION OF SODIUM AND POTASSIUM**
Keren Doenyas-Barak[1,2,4], Ilia Beberashvili[1,4], Adina Bar-Haim[1], Zhan Averbukh[1,4], Ofir Vogel[3], Shai Efrati[1,2,4]
[1]Nephrology Department; [2]Research & Development Unit; [3]Shiram Integrated Medicine Unit, Assaf-Harofeh Medical Center; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

14:30 **A RANDOMIZED CONTROLLED TRIAL OF PREVENTION OF CONTRAST INDUCED NEPHROPATHY WITH SINGLE BOLUS ERYTHROPOIETIN IN DIABETIC PATIENTS WITH eGFR<60 ml/min/1.73m2 UNDERGOING CORONARY ANGIOGRAPHY OR PCI**
Lilach Shema-Didi[1], Atar Shaul[2,4], Majdy Sussan[2], Sarit Eizenberg[2], Pnina Ofir[2], Nabil Marzuq[2], Yulie Feldman-Idov[3,4], Batya Kristal[3,4]
[1]Quality Assurance Department, Western Galilee Medical Center – Nahariya; [2]Cardiology Department, Western Galilee Medical Center, Nahariya; [3]Nephrology Department, Western Galilee Medical Center – Nahariya; [4]Faculty of Medicine of the Galilee, Bar-Ilan University, Safed.

14:40 **RISK OF DEVELOPMENT OF DEMENTIA DURING TREATMENT OF HYPERTENSION WITH DIFFERENT CALCIUM CHANNEL BLOCKERS**
Leonid Feldman[1,2], Michal Shani[2,3], Shlomo Vinker[2,3], Ilia Beberashvili[1,2], Zhan Averbukh[1,2], Shai Efrati[1,2]
[1]Nephrology Department, Assaf Harofeh Medical Center, Zerifin; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.
[3]Department of Family Medicine, Clalit Health Services

14:50 - 15:15 **COFFEE BREAK & EXHIBITION**

SESSION 3 - Chairs: David Tovbin, Leonid Feldman

15:15 - 15:45 FREE COMMUNICATIONS: DIALYSIS ACCESS

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Tatiana Tanasiychuk[1], Daniel Kushnir[1], Alon Antebi[1], Jery Marcusohn[1], Victor Frajewicki[1]
[1]Department of Nephrology and Hypertension, Carmel Medical Center, Haifa.

15:25 **TWO STAGE BRACHIAL-BASILIC TRANSPOSITION FISTULAE PROVIDE SUPERIOR PATENCY RATES FOR DIALYSIS ACCESS IN SAFETY NET PATIENTS**
Eduardo Gonzalez[1], Jeffry Kashuk[2], Angela Sauaia[1], Stuart Linas[1], Ernest Moore[1].
[1]University of Colorado, Denver, Colorado USA; [2]Assia Medical, Assuta Medical Center, Tel Aviv.

15:35 **THE OUTCOME OF LONG TERM USE OF CENTRAL VENOUS CATHETERS IN CHILDREN ON DIALYSIS**
Choni Rinat[1], Efrat Ben-Shalom[1], Rachel Becker-Cohen[1], Sofia Feinstein[1], Yaacov Frishberg[1]
[1]Division of Pediatric Nephrology, Shaare Zedek Medical Center, Hadassah-Hebrew University School of Medicine, Jerusalem.

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15:45 - 16:15 **COFFEE BREAK & EXHIBITION**

SESSION 4 - Chairs: Uzi Gafter, Talia Weinstein

16:15 - 17:00 **GUEST LECTURE**
HEPATITIS C AND CKD: THE FUTURE IS NOW!
Oren Shibolet
Director, Liver Unit, Department of Gastroenterology, Tel-Aviv Medical Center, Tel-Aviv.

17:00 - 17:50 FREE COMMUNICATIONS: HEPATITIS B AND CLINICAL TRANSPLANTATION

17:00 **INDUCTION OF SERO-PROTECTION TO HEPATITIS B VIRUS (HBV) BY VACCINATION WITH SCI-B-VAC™, IN HD PATIENTS WHO FAILED TO RESPOND TO 2ND GENERATION HBV VACCINE**
Nayef Habbashe[1], Linda David1, Nira Keret[1], Roberto Fudin[1], Alla Reitman[1], Yakov Kuperman[1], Avshalom Shostak[1], David Tovbin[1]
[1]Department of Nephrology, HaEmek Medical Center, Afula.

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Emil Elhanan[1], Mona Boaz[2,3], Gil Chernin[1,4], Doron Schwartz D[1,4], Talia Weinstein[1,4]
[1]Nephrology Institute, Tel Aviv Medical Center; [2]Nephrology Institute, Wolfson Medical Center; [3]Ariel University; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

17:20 **EXPOSURE TO SUB-THERAPEUTIC TACROLIMUS LEVELS IMMEDIATELY AFTER KIDNEY TRANSPLANTATION IS ASSOCIATED WITH INCREASED RISK OF GRAFT LOSS**
Benaya Rozen-Zvi[1,3], Shira Schneider[1], Boris Zingermn[1,3], Eytan Mor[2,3], Uzi Gafter[1,3], Ruth Rahamimov[1,2,3].
[1]Nephrology and Hypertension Department; [2]Organ Transplantation Department, Rabin Medical Center, Petah Tikva, Israel; [3]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

17:30 **THE IMPACT OF THE ISRAELI TRANSPLANTATION LAW ON THE SOCIODEMOGRAPHIC PROFILE OF LIVING KIDNEY DONORS**
Hagay Boas[1], Eytan Mor[2,4], Michowitz R[2], Benaya Rozen Zvi[3,4], Ruth Rahamimov[2,3,4]
[1]Edmond J. Safra Center for Ethics, Tel Aviv University; [2]Department of Transplantation; [3]Department of Nephrology, Rabin Medical Center, Beilinsonl Petah-Tikwa; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

17:40 **RECURRENCE OF MEMBRANOPROLIFERATIVE GLOMERULONEPHRITIS TYPE I AFTER KIDNEY TRANSPLANTATION –17 YEARS' EXPERIENCE OF A SINGLE CENTER**
Hefziba Green[1,3], Ruth Rahamimov[1,3], Eitan Mor[2,3], Uzi Gafter[1,3]
[1]Department of Nephrology and Hypertension, Rabin Medical Center, Petah-Tikva; [2]Department of Transplantation, Rabin Medical Center, Petah-Tikva; [3]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

17:50 - 18:00 **COFFEE BREAK & EXHIBITION**

SESSION 5 - Chairman: Eliezer Golan

18:00 - 19:30 **GENERAL ASSEMBLY**

Friday, April 25th

SESSION 6 - Chairs: Batya Kristal, Zaid Abassi

08:30 - 09:30 FREE COMMUNICATIONS: BASIC SCIENCE

08:30 **HAPTOGLOBIN 2-2 GENOTYPE IS ASSOCIATED WITH DECREASED LEVELS OF ACTIVE VITAMIN D AND ACCELERATED RENAL APOPTOSIS IN DIABETIC NEPHROPATHY MICE AND PATIENTS**

Inbal Dahan[1], Nadia Thawho[1], Farid Nakhoul[1], Evgeny Farber[1], Ofer Ben-Itzhak[2], Rachel-Miller-Lotan[2] and Andrew P Levy[2]
[1]Diabetic Nephropathy Lab, Baruch-Padeh Poriya Medical Center, Lower Galilee, Faculty of Medicine, Bar-Ilan University, Galilee; [2]Department of Vascular Biology, Rappaport faculty of Medicine, Institute of Technology, Haifa.

08:40 **AUTOLOGOUS BONE-MARROW STEM CELLS INDUCTION BY LOW-LEVEL LASER THERAPY CAN FACILITATE THE RECUPERATION OF THE INJURED KIDNEY**

Uri Oron[1], Hana Tuby[1], Ramzia Abu Hamad[2,3], Lidya Maltz[1], Keren Donyas-Barak[2,3], Shai Efrati[2,3]
[1]Department of Zoology, The George S. Wise Faculty of Life Sciences, Tel-Aviv University, Israel; [2]Nephrology and Research and [3]Development Units Assaf-Harofeh Medical Center, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

08:50 **THE EFFECTS OF GLUCAGON-LIKE- PEPTIDE 1(GLP1) AND VITAMIN D ON THE INFLAMMATORY RESPONSE OF ENDOTHELIAL CELLS EXPOSED TO A DIABETIC-LIKE ENVIRONMENT**

Tali Zitman-Gal[1], Meital Ohana[1,2], Janice Green[1], Eliezer Golan[1,2], Jacques Bernheim[1,2], Sydney Benchetrit[1,2]
[1]Renal Physiology Laboratory, Department of Nephrology and Hypertension, Meir Medical Center, Kfar Saba, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv.

09:00 **L-ARGININE IMPROVES ENDOTHELIAL FUNCTION, INDEPENDENT OF ARGININE UPTAKE, IN AORTAS FROM CHRONIC RENAL FAILURE FEMALE RATS**

Inna Frolkis[1], Doron Schwartz[2,4], Tamara Chernichovski[2], Sharon Levi[2], Yael Pri-Paz[2], Aalexander Shtabsky[3], Idit F Schwartz[2,4]
[1]Department of Cardiovascular Surgery; [2]Nephrology Institute; [3]Pathology Institute; Tel Aviv Medical Center; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

09:10 **Fn14•TRAIL EFFECTIVELY ACTIVATES PRO-APOPTOTIC SIGNALS AND ABOROGATES ANTI-APOPTOTIC ONES, LEADING TO INHIBITION OF RENAL CELL CARCINOMA GROWTH**

Keren Tzukert[1], Kobi Tzdaka[1], Shira Amsili[3], Tatyana B. Prigozhina[1], Itamar Sagiv[1], Alexandra Aronin[1], Roy Shen[1], Leonid Grinman[1], Jacob Rachmilewitz[2], Fanny Shkedy Szafer[3], Noam Shani[3], Mark L. Tykocinski[4], Michal Dranitzki Elhalel[1]
[1]Nephrology and Hypertension Services, Hadassah-Hebrew University Medical Center, Jerusalem; [2]Goldyne Savad Institute of Gene Therapy, Hadassah-Hebrew University Medical Center, Jerusalem; [3]KAHR Medical LTD, Jerusalem; [4]Office of the Dean, Jefferson Medical College, Philadelphia, Pennsylvania USA.

09:20 **DEPRESSED BONE ERYTHROPOIETIN RECEPTOR IN A RAT MODEL OF ANEMIA AND CHRONIC KIDNEY DISEASE**
Lital London[1,3], Yael Segev[1,3], Daniel Landau[2,3]
[1]Shraga Segal Department of Immunology; [2]Pediatrics Department; [3]Faculty of Health Sciences, Ben Gurion University, Beer Sheva.

SESSION 7 - Chairs: Ze'ev Korzets, Avry Chagnac

המושב בחסות חברת: עצמון מדיקל טכנו מדיקל בע"מ

09:30 - 10:40 GUEST LECTURE: PERITONEAL DIALYSIS
Martin Wilkie[1,2]
[1]Consultant Renal Physician, Sheffield Teaching Hospitals, NHS Foundation Trust, UK; [2]Editor in Chief of Peritoneal Dialysis International

09:30 **A MULTIDISCIPLINARY APPROACH TO OPTIMISING THE QUALITY OF PERITONEAL DIALYSIS CARE**

10:05 **RECENT PROGRESS IN PERITONEAL DIALYSIS RESEARCH**

10:40 - 11:10 **COFFEE BREAK & EXHIBITION** SANOFI RENAL בחסות חברת:

SESSION 8 - Chairs: Jayson Rapoport, Daniel Landau

11:10 - 12:10 THE GERMAN-ISRAELI SESSION

11:10 **CLINICAL AND MECHANISTIC ASPECTS OF ANCA VASCULITIS**
Ralph Kettritz
Charité Medical Faculty and Experimental and Clinical Research Center, a joint cooperation between the Max-Delbrück Center for Molecular Medicine and the Charité Medical Faculty, Berlin, Germany.

11:40 **GRAINY-HEAD TRANSCRIPTION FACTORS IN COLLECTING DUCT MORPHOGENESIS AND DIFFERENTIATION**
Kai M. Schmidt-Ott
Max-Delbrueck Center for Molecular Medicine, Berlin, Germany.

12:10 - 12:25 **COFFEE BREAK & EXHIBITION**

SESSION 9 - Chairs: Michal Dranitzki Elhalel, Yaacov Frishberg

12:25 - 13:10 **GUEST LECTURE**
KIDNEY REGENERATION: FROM BASIC BIOLOGY TO TRANSLATIONAL THEMES
Benjamin Dekel
Pediatric Stem Cell Research Institute, Division of Pediatric Nephrology Edmond & Lili Safra Children's Hospital,
Sheba Center for Regenerative Medicine, Sheba Medical Center,Tel-Hashomer.

13:15 - 14:30 **LUNCH**

Scientific Programme

SESSION 10 - Chairs: Noa Berer-Yanai, Itzchak Slotki

14:30 - 15:30 FREE COMMUNICATIONS: HEMODIALYSIS

14:30 **FREQUENT HOME DIALYSIS IN ISRAEL: A REPORT ON THE FIRST PATIENT**
Jayson Rappaport[1,2,3]
[1]Dialysis Unit, Assuta Hospital Tel-Aviv; [2]Kaplan Medical Center Rehovot; [3]Faculty of Medicine, Hebrew University, Jerusalem.

14:40 **EFFECT OF DIALYSATE CALCIUM CONCENTRATIONS ON INTRA-DIALYTIC IRON ASSOCIATED PROTEIN OXIDATION**
Amir Abd Elkadir[1], Shimon Storch[2], Rephael Geri[3], Amos Douvdevani[4], David Tovbin[5].
[1]Biomedical Engineering; [2]Nephrology, Bnai Zion Medical Center, Haifa; [3]Nephrology Unit, Rivka Ziv Medical Center, Safed; [4]Nephrology Laboratory- Soroka Medical Center, Beer-Sheva; [5]Nephrology Department, HaEmek Medical Center, Afula, Israel.

14:50 **SEVERITY OF PULMONARY HYPERTENSION IS ASSOCIATED WITH HAPTOGLOBIN 2-2 GENOTYPE IN DIABETIC HEMODIALYSIS PATIENTS**
Evgeny Farber[1], Farid Nakhoul[1], Inbal Dahan[1], Nadia Thawho[1], Rachel-Miller-Lotan[2], Andrew P Levy[2]
[1]Diabetic Nephropathy Lab, Baruch- Padeh Poriya Medical Center, Lower Galilee, Faculty of Medicine, Bar-Ilan University, Galilee; [2]Department of Vascular Biology, Rappaport faculty of Medicine, Institute of Technology, Haifa.

15:00 **SERUM URIC ACID AS A CLINICALLY USEFUL NUTRITIONAL MARKER AND PREDICTOR OF OUTCOME IN MAINTENANCE HEMODIALYSIS PATIENTS**
Ilia Beberashvili[1,2], Inna Sinuani[3], Ada Azar[4], Gregory Shapiro[1], Leonid Feldman[1,2], Kobi Stav[2,5], Zhan Averbukh[1,2]
[1]Nephrology Department, Assaf Harofeh Medical Center, Zerifin; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv; [3]Pathology Department, Assaf Harofeh Medical Center, Zerifin; [4]Nutrition Department, Assaf Harofeh Medical Center, Zerifin; [5]Urology Department, Assaf Harofeh Medical Center, Zerifin.

15:10 **AN INCREASE IN INTERLEUKIN 6 LEVEL DURING A HEMODIALYSIS SESSION IS ASSOCIATED WITH MORTALITY**
Shelly Lichtenberg[1], Asher Korzets[1,2], Yaacov Ori[1,2], Arie Erman[1], Uzi Gafter[1,2], Benaya Rozen-Zvi[1,2]
[1]Department of Nephrology and Hypertension, Rabin Medical Center, Beilinson Campus, Petah Tikva; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

15:20 **SPINAL ISCHEMIC STROKE FOLOWING DIALYSIS: CLINICAL AND RADIOLOGICAL FINDINGS**
Ronen Schneider[1], Asaf Honig[2], John Gomori[3], Chen Makranz[2], Ronen Leker[2]
[1]Department of Nephrology; [2]Department of Neurology; [3]Department of Radiology; all in Hadassah-Hebrew University Medical Center, Jerusalem.

SESSION 11 - Chairs: Victor Frajewicki, Asher Korzets

15:30 - 15:50 **(ISRAELI) NEPHROLOGY WITHOUT FRONTIERS**
Noa Berer-Yanai
Nephrology Department, Hillel Yaffe Medical Center, Hadera.

15:50 - 16:30 **DEBATE: ARE WE OVERDIAGNOSING CKD IN THE GENERAL (ELDERLY) POPULATION?**

YES, WE ARE
Jayson Rapoport[1,2]
[1]Kaplan Medical Center Rehovot; [2]Faculty of Medicine, Hebrew University, Jerusalem.

NO, WE AREN'T
Leonid Feldman[1,2]
[1]Assaf Harofeh Medical Center, Zerifin; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Saturday, April 26th

SESSION 12 - Chairs: Eliezer Golan, Talia Weinstein

10:30 - 11:30 **THE FUTURE OF NEPHROLOGY IN ISRAEL – CHALLENGE AND OPPORTUNITY**
Talia Weinstein, Eliezer Golan
ISNH Executive board

11:30 - 12:00 **WATER FOR DIALYSIS – IMPLICATIONS OF THE NEW MOH REGULATIONS**
Yoram Yagil
Barzilai Medical Center, Ashkelon and Faculty of Health Sciences Ben-Gurion University, Beer-Sheva

12:00 - 12:30 **CLINICAL RESEARCH AND THE NEPHROLOGY COMMUNITY IN ISRAEL**
Yoram .Yagil
Barzilai Medical Center, Ashkelon and Faculty of Health Sciences Ben-Gurion University, Beer-Sheva

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Session 2

DIETARY THERAPY FOR CHILDREN WITH CONGENITAL SOLITARY FUNCTIONING KIDNEY

Ze'ev. Katzir[1], Sarah Blumberg[1]
[1]Institute of Nephrology, E.Wolfson Medical Center, Holon.

Introduction: Renal injury, proteinuria and increased incidence of hypertension had been described as consequences of
congenital solitary functioning kidney (CSFK) in children (13%, 19% and 47%, respectively). Recent studies showed that 32%
children with CSFK developed renal injury around 10 years of age and 20%>50% of young adults with CSFK required dialysis by the
age of 30 years. Dietary protein restriction is one of the mainstays in the treatment to slow the progression of chronic kidney
disease.The role of low protein intake in attenuation renal damage in reduced- nephron-mass conditions had been investigated in
animal experimental models. Human studies in this field focus on uninephrectomized patients and kidney transplant donors and
recipients. Dietary salt intake reduction can facilitate blood pressure reduction in hypertensive patients receiving medical therapy.
Relevant data concerning acquired or congenital SFK had not been described so far. In view of all these knowledge, we adopted
current protective therapeutic measures: protein restriction and low-salt diet and examined their long preventing effect on the known
outcomes of CSFK: proteinuria, kidney function reduction and hypertension.

Methods: Twenty three children referred to our pediatric nephrology out-patient clinic for observation because of ultrasonographic
findings of CSFK, were included in our prospective observational study. Doubtful diagnoses were confirmed by renal dynamic scan.
Protein and salt restriction: 0.85 x recommended daily allowance (RDA) was started under dietitian continuous supervision (In
infants: since weaning from breast feeding or industrial formulae). Compliance verification was performed by
Monitoring urinary urea nitrogen (g/24 h) and body weight, according to the equation:
Daily protein intake (g) =
[(Urinary Urea Nitrogen (g/24 h) + 0.031 × body weight (kg)] × 6.25 .
Measuring urine sodium (mg/24 h).
Follow-up (18-22 years)included comprehensive clinical, growth and developmental assessment, renal function and urine protein

excretion since referral visit, twice-a-year visits until the age of 3 years and then once-a-year visit.

Results: Baseline data showed normal physical assessment, arterial blood pressure kidney functions and urinalysis**.** Kidney
malformations: Ipsilateral: multicystic/dysplastic kidneys (14), renal agenesis (7), renal atrophy (1), severe hydronephrosis and
hydroureter due to Ureteropelvic junction stenosis (UPJs) (1). Contralateral: UPJs (1). Systemic involvements: Melnick's syndrome
(1), prematurity (1).
Adherence to dietary restrictions: 89 +8% for protein and 93+5% salt. At the end of follow up: One patient, with congenital severe
hydronephrosis and hydro ureter due to UPJs, had chronic kidney disease (CKD) grade I. The rest of patients had normal kidney
function. None had hypertension, proteinuria or growth and development deterioration.

Conclusion: Strict follow-up, together with controlled dietary supervision for mild protein and salt restriction, prevent kidney
injury, proteinuria and hypertension in CSFK, after 18-22 years. This therapy has no detrimental influence on growth and
development.

THE SPECTRUM OF RENAL DISEASE IN KIDNEY BIOPSIES OF DIABETIC PATIENTS

Yael Einbinder[1], Debbie J. Goodman[2], Isabelle Haggiag[1,2], Tania Zahavi[1,2], Sydney Benchetrit[1,2]
[1]Department of Nephrology and Hypertension, Meir Medical Center, Kfar Saba, Israel; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Abstract:

Background: A kidney biopsy is not routinely performed for diabetic patients with chronic kidney disease. However in some cases a biopsy would be carried out to exclude other treatable renal disease. The prevalence and the nature of non diabetic renal disease (NDRD) among type II diabetic patients in Israel have not been evaluated yet. In the present study we assessed the pathological findings of kidney biopsy in light of the clinical features and the indications for biopsy performance.

Methods: 200 native kidneys biopsied were performed during study period (Jan 2009-Dec 2012); Patients who had diagnosis of diabetes mellitus were included in the study. Clinical data and pathological findings were retrospectively collected and analyzed.

Results: The cohort included 34 patients, median age 61.8 years. Male to female ratio was 25:9. Mean serum creatinine was 1.8 ± 1.2 mg/dl. Prevalence of NDRD, Diabetic nephropathy (DN) and combined pathology was 58.8%, 32.4% and 8.8% respectively. The duration of diabetes was significantly shorter in patients with NDRD (5.1 ± 3.1yrs; median 5.0 years) compares to patients with diabetic nephropathy or combined (13.0±9.6; median 11.0 years). Insulin therapy was significantly more common in patients with DN, 72% vs. 5% in NDRD. Neither the level of proteinuria nor the rate of renal function deterioration could predict pathological findings in the biopsy. The most common NDRD disease was nephrosclerosis followed by Membranous nephropathy, IgA nephropathy and chronic TI nephritis. Histology findings demonstrate a higher level of interstitial inflammation and interstitial fibrosis in kidney biopsies with DN as compared to NDRD. Vascular hyalinosis was a common finding in all biopsies.

Conclusions: In our population 17% of all kidney biopsies were performed in diabetic patients. Non diabetic renal disease was common among diabetic patients who underwent kidney biopsy. Prolonged duration of diabetes and Insulin therapies were associated with a greater likelihood of DN whereas Diabetic retinopathy was absent in all patients with NDRD. The high prevalence of NDRD in our population emphasizes the judicious use of kidney biopsy in diabetic patients.

ANTI-PLA2R (ANTI PHOSPHOLIPASE A2 RECEPTOR): THE ANCA OF MEMBRANOUS NEPHROPATHY?

Nomi Levin-laina[1], Alex Wolkov[2], Boris Gilburd[3], Dganit Dinour[1,4], Eli J.Holtzman[1,4]
[1]Nephrology and Hypertension Institute; [2] Pathology Institute; [3]Hematology Institute; all in Sheba Medical Center, Tel-Hashomer; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

הקדמה

MN הינה האבחנה השכיחה ביותר בביופסיות של מבוגרים עם תסמונת נפרוטית, במיוחד מעל גיל 40. במשך עשרות שנים חיפשו את האנטיגן ההומני הגורם להתפתחות המחלה. בשנת 2009, 50 שנים לאחר הפיתוח הראשון של מודל HN, זוהה נוגדן חדש ששפך אור על הפתוגניזה של MN. נמצא כי נוגדנים כנגד PLA2R קיימים בסרום של כ-75% מהחולים עם MN אידיופטי, ולא נמצאים בסרום של חולים עם MN משני, מחלות גלומרולריות או אוטואימוניות אחרות או בביקורת של בריאים. נמצאה בהמשך קורלציה בין טיטר הנוגדנים לפעילות אימונולוגית של המחלה ובמחקרים שונים נמצא כי נוגדנים מזוהים בעיקר בחולים עם מחלה פעילה, וברבים הם נעלמים בזמן רמיסיה מלאה, וחוזרים כאשר יש הישנות של המחלה. נוגדנים כנגד PLA2R נמצאים גם בביופסיות של חולים עם IMN, לא תמיד בקורלציה עם קיומם בסרום. מטרת העבודה הנוכחית הייתה לבצע מחקר ראשוני לבדיקת קיום נוגדנים ל-PLA2R בסרום ובביופסיות של חולים עם אבחנה של MN.

שיטות

נוגדנים כנגד PLA2R נבדקו בסרום ובביופסיות כליה של חולים עם אבחנה של MN ומס' קטן של חולים עם תסמונת נפרוטית מסיבות אחרות. קיום נוגדנים בדם נבדקה ע"י ELISA וקיום נוגדנים בביופסיות כליה נעשתה באימונופלורסנציה. נעשתה קורלציה לנתונים קליניים של החולים לסטטוס מחלתם.

תוצאות

בדיקת נוגדנים ל-PLA2R הוכנסה לשימוש ניסיוני במוסדנו לפני כשנה. בבדיקות הראשוניות מצאנו טיטרים חיוביים לנוגדנים ב-11 מתוך 31 בדיקות בסרום. נמצא כי הנוגדנים חיוביים רק בחולים עם MN אידיופטי ומחלה פעילה, ושליליים בחולים עם MN משני או קשור עם אלמנטים אוטואימוניים, או במס' חולים עם תסמונת נפרוטית מסיבה אחרת. בחודשים האחרונים הבדיקה הוכנסה לשימוש שגרתי וניתן להפנות חולים לבצעה. בעבודה זו נסקור את ניסיוננו בביצוע בדיקת נוגדנים כנגד PLA2R בסרומים ובביופסיות של חולים עם תסמונת נפרוטית ואבחנה של MN. תוצג הקורלציה בין קיום הנוגדנים בסרום וכן הימצאותם בביופסיות כליה לבין הפעילות הקלינית של מחלת הכליות.

מסקנות

בדיקת נוגדנים כנגד PLA2R בסרומים ובביופסיות של חולים עם תסמונת נפרוטית הינה בדיקה חדשה במוסדנו. רמות מוגברות של נוגדנים ל-PLA2R קשורות עם MN אידיופטי ומחלה פעילה. לזיהוי PLA2R כאנטיגן ב-IMN משמעות עתידית באבחון וניטור פעילות המחלה. הרגישות והספציפיות של הבדיקה תאפשר אבחנה של חולים עם תסמונת נפרוטית ללא צורך בביופסית כליה פולשנית. ממצא של MN בביופסיה ללא נוגדנים, יצריך חיפוש אחר גורמים ל-MN משני. בשיעור גבוה מהחולים המחלה עוברת רמיסיה, לעיתים עם פרוטאינוריה שארית כתוצאה מהצטלקויות. בדיקת הנוגדנים תאפשר להבדיל בין מחלה פעילה אימונולוגית, המצריכה טיפול אימונוסופרסיבי, לבין פרוטאינוריה שארית, המצריכה טיפול תומך בלבד.

MULTIPLE SCHEDULE SPOT URINE COLLECTION FOR THE EVALUATION OF 24-HOUR EXCRETION OF SODIUM AND POTASSIUM

Keren Doenyas-Barak[1,2,4], Ilia Beberashvili[1,4], Adina Bar-Haim[1], Zhan Averbukh[1,4], Ofir Vogel[3], Shai Efrati[1,2,4]

[1]Nephrology Department; [2]Research & Development Unit; [3]Shiram Integrated Medicine Unit, Assaf-Harofeh Medical Center; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Objectives: Evaluation of total daily sodium and potassium consumption is an essential part in the management of hypertensive patients. Today no convenient method for its evaluation exists, as the gold standard 24-hour urine collection for the measurement of electrolyte excretion, is cumbersome and often incorrectly performed and compliance for its performance is poor. Single spot or shorter urine collections are inaccurate enough to replace the gold standard.
The aim of the current study was to evaluate a new method that uses multiple-scheduled spot urine for the evaluation of daily electrolyte excretion.

Methods: Four scheduled urine spots were collected at 12:00, 16:00, 20:00 and in the following morning, simultaneously with a 24 hours urine collection. Estimated daily creatinine excretion was evaluated using the formulas: [28-(age/6)]*weight for men,
and [22-(age/9)]*weight for women.
Sodium and potassium to creatinine ratios were then calculated for each of the four spots and the ratios were corrected for estimated daily creatinine excretion, in order to evaluate daily electrolyte excretion. The means of sodium or potassium excretion calculated for each of the spots was than used for calculation of the estimated daily excretion and compared to the actual 24h excretion.

Results: Forty nine healthy volunteers with normal renal function were included.
A good linear correlation was found between the estimated daily excretion, based on the mean of the four spots, and the real 24h urinary excretion, R=0.79 and R=0.787 for sodium and potassium excretion respectively, P=0.0001 for both.
The correlation with the gold standard was stronger for the mean of the four spots than for any of the single spots.
Estimated daily creatinine excretion also correlated with daily creatinine excretion, with R=0.680 and P=0.0001

Conclusions: An estimation of 24h urinary excretion of sodium and potassium based on four-scheduled spot urine can be used for evaluation of daily sodium and potassium excretion. This simple method can be easily performed and thus can be repeated as needed as part of the routine evaluation of hypertension patients.

A RANDOMIZED CONTROLLED TRIAL OF PREVENTION OF CONTRAST INDUCED NEPHROPATHY WITH SINGLE BOLUS ERYTHROPOIETIN IN DIABETIC PATIENTS WITH eGFR<60 ml/min/1.73m^2 UNDERGOING CORONARY ANGIOGRAPHY OR PCI

Lilach Shema-Didi[1], Atar Shaul[2,4], Majdy Sussan[2], Sarit Eizenberg[2], Pnina Ofir[2], Nabil Marzuq[2], Yulie Feldman-Idov[3,4],
Batya Kristal[3,4]
[1]Quality Assurance Department, Western Galilee Medical Center – Nahariya; [2]Cardiology Department, Western Galilee Medical Center, Nahariya; [3]Nephrology Department, Western Galilee Medical Center – Nahariya; [4]Faculty of Medicine of the Galilee, Bar-Ilan University, Safed.

Introduction: Contrast-induced nephropathy (CIN) was found to be associated with poor outcomes, thus prevention of CIN may be of clinical value. Erythropoietin (EPO) has been shown to elicit tissue-protective effects in experimental models and in few clinical studies of acute kidney injury (AKI). We therefore evaluated the effectiveness of EPO for prevention of CIN after coronary angiography (CA) and/or percutaneous coronary intervention (PCI) in consecutive patients at high-risk for having CIN.

Methods: A prospective, randomized, controlled trial was carried out in patients, who underwent primary PCI or elective CA with or without PCI. Patients received a single dose of 50,000U of EPO or regular treatment before CA/PCI. CIN was defined as an increase in serum creatinine (SCr) level, compared to basal value, of at least 0.5 mg/dl during the first 3 days after exposure to contrast media. Primary outcome was the incidence of CIN. Secondary outcomes were enzymatic infarct size, hospital length of stay, renal replacement therapy and in-hospital mortality. Cystatin C and NGAL were measured.

Results: Among the elective patients (68 patients) the incidence of CIN was low and similar among both groups (5.9%, p=ns). However, the incidence of CIN among patients undergoing primary PCI (N=12) was lower in the EPO group (0%) compared to control group (20%). There were no adverse effects of EPO administration.
Conclusions: The low incidence of CIN among elective patients masks the potential reno-protective effect of EPO. However, among primary PCI patients, we demonstrated a beneficial effect. Patient recruitment is on-going, and complete data will be presented.

RISK OF DEVELOPMENT OF DEMENTIA DURING TREATMENT OF HYPERTENSION WITH DIFFERENT CALCIUM CHANNEL BLOCKERS

Leonid Feldman[1,2], Michal Shani[2,3], Shlomo Vinker[2,3], Ilia Beberashvili[1,2], Zhan Averbukh[1,2], Shai Efrati[1,2]

[1]Nephrology Department, Assaf Harofeh Medical Center, Zerifin; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

[3]Department of Family Medicine, Clalit Health Services

Introduction. Arterial hypertension (HTN) is proved to be a risk factor for development of dementia [Curr Cardiol Rep. 2003;5; 435-40]. Medical treatment with blood pressure lowering drugs may decrease the risk of dementia [Arch Neurol 2006; 63: 686-92]. Experimental study pointed to the possibility of difference between different calcium channel blockers (CCB) in their neuro-protective effect [Mol Med 2011;17;147-62]. The aim of our study was to compare the risk of dementia during treatment of hypertension with one of three different CCB with such a risk during treatment without CCBs.

Methods. This is a retrospective cohort study based on electronic database of Clalit Health Services, Central District. Study period was 11 years (2002-2012). Inclusion criteria: age 40-75**,** diagnosis of HTN and absence of diagnosis of "Dementia" at the follow-up starting point before 2002**,** minimal duration of treatment $\geq$ 30 month with single specific CCB. Diagnosis of dementia was established according to appearance of its diagnostic code or prescription of medication for its treatment – whatever occurred first.

Results. 19,689 patients were included in the study. The mean age was 60.4 years, 50.1% were males and the mean creatinine was 1.01 mg/dL. Dementia developed in 1,184 (6.0%) patients.

Table. Risk of dementia during treatment with 3 different CCBs

	Amlodipine n=4,044	**Lercanidipine n=630**	**Nifedipine n=2,093**	**No CCB N=12,922**
Treatment period, months	68.1	79.1	90.7	
HR of dementia (not adjusted)	**0.81 P=0.006**	1.31 P=NS	1.1 P=NS	1.0
HR of dementia (adjusted)	**0.67 P<0.001**	0.89 P=0.440	**0.74 P=0.001**	1.0

Conclusions. Treatment of arterial hypertension with Amlodipine or Nifedipine may be associated with decreased risk of development of dementia, than treatment without use of calcium channel blockers.


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Session 3

CIPROFLOXACIN AND CEFAZOLIN AS EMPIRICAL INITIAL THERAPY OF CATHETER - RELATED PERITONITIS: EIGHTEEN-YEAR FOLLOW- UP

Tatiana Tanasiychuk[1], Daniel Kushnir[1], Alon Antebi[1], Jery Marcusohn[1],Victor Frajewicki[1]
[1]Department of Nephrology and Hypertension, Carmel Medical Center, Haifa.

Introduction. Peritonitis still remains a common and serious complication of Peritoneal Dialysis (PD) .Peritonitis is the primary reason of technique failure and switch from PD to Hemodialysis. Peritonitis is also associated with increased risk of non infectious adverse effects including loss of residual renal function and death. Cure rate varies widely from 44% to 85% but the initial empirical treatment of PD-related peritonitis is still under investigation. According to the ISPD 2010 recommendations, the most accepted antibiotic empiric protocol includes the combination of Vancomycin/Cephalosporin and a third-generation Cephalosporin or Aminoglycoside.
Methods. From 1998 our PD program uses an antibiotic empiric protocol which includes intraperitoneal Cefazolin and oral Quinolones after a first intraperitoneal loading dose (Ofloxacin or Ciprofloxacin). The previous antibiotic protocol used a combination of intraperitoneal Vancomycin/ Cephalosporin and Aminoglycosides. We retrospectively evaluated all records of peritonitis between 1995 - 2012 in PD patients.
Results. Peritonitis was recorded in 323 cases in 143 patients on either Automated PD or Continuous Ambulatory PD (performed with Y-sets). Of them, 250 were recurrent/repeated in 71 patients (49%). Single cases were registered in 72. Bacteriological data were available for 230 episodes. In 222 episodes infection was caused by a single microorganism: 127 cases of Gram positive bacteria (69% were Oxacillin- resistant), and 57 cases of Gram negative (33% were pseudomonas). There were 9 episodes of fungal peritonitis and 35 episodes of culture negative peritonitis (15.8%). In 8 cases, 2 bacteria grew in the culture. The overall treatment success rate was 73%. Rough mortality was 4%, most of them (57%) due to Gram negative germs (predominantly pseudomonas species).With the Vancomycin/Cephalosporin and Aminoglycosides based protocol (112 cases) the resolution rate was 69.6%. In the Quinolone containing protocol in 211 episodes of peritonitis, the resolution rate was 75.8% (NS).
Conclusion: the empirical treatment with oral Quinolones and intraperitoneal Cefazolin of PD related peritonitis is at least as good as the widely accepted combination of Vancomycin/Cephalosporin and third-generation Cephalosporin or Aminoglycoside.

TWO STAGE BRACHIAL-BASILIC TRANSPOSITION FISTULAE PROVIDE SUPERIOR PATENCY RATES FOR DIALYSIS ACCESS IN SAFETY NET PATIENTS

Eduardo Gonzalez[1], Jeffry Kashuk[2], Angela Sauaia[1], Stuart Linas[1], Ernest Moore[1].
[1]University of Colorado, Denver, Colorado USA; [2]Assia Medical, Assuta Medical Center, Tel Aviv.

Background: Guidelines of the National Kidney Foundation recommending aggressive pursuit of fistulae for dialysis access in lieu of prosthetic AV grafts (AVG) have stimulated a renewed interest in transposed brachial-basilic fistulae (TBB) as an alternative technique for upper arm access in patients who may not be candidates for a lower arm radial-cephalic (RC) or forearm brachial-cephalic (BC) fistula. We hypothesized that in our safety net population, when RC and BC were not possible, TBB would provide patency rates superior to AVG and equivalent to RC and BC.

Methods: We analyzed retrospectively our most recent 2.5-year experience with dialysis access procedures at our metropolitan safety-net hospital. Procedures were grouped as follows: RC, BC, TBB, and AVG. The access outcomes measured were primary failure, to use, need for intervention, and primary as well as secondary patency. Differences in age, sex, race, renal function, baseline diagnoses (diabetes mellitus, hypertension, coronary artery disease, and peripheral vascular disease), as well as the number of previous accesses, were adjusted in the analysis. Logistic regression was used to identify independent predictors of primary failure, and Kaplan-Meier plots assessed differences in primary patency rates. A log of the time variables was used to approximate normal distribution.

Results: In all, 193 patients were included in this study as follows: RC, 75 (39%) patients; BC, 35 (18%) patients; TBB, 33 (17%) patients; and AVG, 50 (26%) patients. Primary patency means differed marginally between groups (P = .08), and when grafts were excluded from the analysis, no difference was found between primary patency in all autogenous fistula techniques (P = .88). Kaplan-Meier plots showed that when analyzing the first 35 weeks, a significantly lower primary patency among graft recipients early after the procedure was noted, and a higher performance of BB after 20weeks was noted (log-rank P = .05,Wilcoxon P = .004). Furthermore, secondary patency did not vary significantly between groups (P = .62). RC were more likely to fail primarily when compared with the other access groups (P = .03), and in a univariate analysis, underlying hypertension as associated with a lower risk of primary failure (P = .01) compared with other diagnoses. A logistic regression stepwise selection showed that the underlying diagnoses of peripheral vascular disease, diabetes mellitus, or coronary artery disease were associated with a greater risk of primary failure compared with those with HTN (P = .001, odds ratio = 4.05; 95% confidence interval: 1.71--9.59), as well as the presence of a previously failed access (P = .04; odds ratio = 2.39; 95%confidence interval: 1.08--5.67).

Conclusion:
In a safety-net population, our results suggest that 2-stage TBB provide patency rates equivalent to BC and RC and superior to grafts. Although 2 procedures are required, TBB provide a reliable access and should be considered the next choice when RC and/or BC are not possible.

THE OUTCOME OF LONG TERM USE OF CENTRAL VENOUS CATHETERS IN CHILDREN ON DIALYSIS

Choni Rinat[1], Efrat Ben-Shalom[1], Rachel Becker-Cohen[1], Sofia Feinstein[1], Yaacov Frishberg[1]
[1]Division of Pediatric Nephrology, Shaare Zedek Medical Center, Hadassah-Hebrew University School of Medicine, Jerusalem

Abstract:

Background: Hemodialysis (HD) depends on effective access to blood vessels. Infections and venous stenosis are major complications of central venous catheter (CVC). Venous stenosis prevalence is not known in pediatric patients.

Methods::Staff sterile techniques were improved. To reduce infection-induced CVC replacement we slightly expanded the mitigating conditions for CVC replacement and site salvage guidelines. We recorded data from all patients between 2000-10, including infections and infection rate. CVC salvage, re-infection risk, CVC survival and trends over the time were measured. Venography was done in some patients.

Results: Sixty eight patients, median age 3.71 years, who had 184 CVCs participated. Infection rate was 2.89/1000 CVC days. Rate was higher and CVC survival lower in younger patients, during earlier study period and with increased number of CVCs inserted in a given patient. Central vein stenosis was found in 11/18 patients tested, frequently asymptomatic. Previous CVCs and infections numbers positively correlated with stenosis. We replaced only 16/50 (32%) of CVCs that had guidelines indication for replacement. Re-infection rate, even with Staphylococcus aureus, was not significantly higher than in patients without replacement indication. Avoiding replacement was not associated with disseminated infection or death. Throughout the study period infection rate, significantly decreased and CVC survival and infection free survival increased.

Conclusions: HD in young children is associated with a high rate of infection. The frequent venous stenosis detected is alarming. . Expanding the mitigating conditions for CVC replacement and attempts at site preservation did not result in undesired complications and may reduce CVC stenosis. Strict sterile techniques may reduce infection rate.

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Session 4

INDUCTION OF SERO-PROTECTION TO HEPATITIS B VIRUS (HBV) BY VACCINATION WITH SCI-B-VAC™, IN HD PATIENTS WHO FAILED TO RESPOND TO 2ND GENERATION HBV VACCINE

Nayef Habbashe[1], Linda David[1], Nira Keret[1], Roberto Fudin[1], Alla Reitman[1], Yakov Kuperman[1], Avshalom Shostak[1], David Tovbin[1]
[1]*Department of Nephrology, HaEmek Medical Center, Afula.*

Introduction- Hemodialysis (HD) patients vaccinated against hepatitis B had a 70 % lower risk for infection compared with non-vaccinated patients. However, because of their low (50-60 %) response rate to vaccination, lower antibody titer and inability to maintain adequate titers over time, attempts have been made to enhance their immune response to HBV vaccine.
Sci-B-Vac™ is a 3rd generation mammalian cell derived vaccine *with 2 additional proteins (pre-S1and pre-S2), which enhance the immune response to HBV. This is manifested by rapid generation of high titer of neutralizing antibodies, which usually appear already after the first injection.*

Methods- In a prospective open labeled study performed in HaEmek Medical Center HD unit, 20 µg of the Sci-B-Vac™ vaccine were injected intramuscular (IM) in 3 injections at time-point 0 and after 2 and 6 months, in 18 HD patients who failed to respond to at least 3 dose vaccination series with 2nd generation HBV vaccine. Sero-protection was assessed after 6 months from the 1st injection and defined as an anti HBs level >10 mIU/mL.
Safety was assessed by monitoring for adverse events and recording local signs and symptoms for 3 days following vaccination.

Results- 1 patient refused to HBV antibody assessment. 14/17 (82%) of the vaccinated and anti HBs assessed patients developed sero-protection for HBV for the first time. 3/17 (18 %) patients didn't develop sero-protection. There were no side effects reported for the vaccine.

Conclusions- Sci-B-Vac™ is effective in inducing sero-protection to HBV in HD patients who failed to respond to vaccination series with 2nd generation HBV vaccine.

A RANDOMIZED, TREATMENT-CONTROLLED CLINICAL TRIAL TO EVALUATE THE IMMUNOGENICITY OF SCI-B-VAC™ COMPARED TO ENGERIX B® AMONG NAÏVE AND NON-RESPONDING PREVIOUSLY VACCINATED DIALYSIS PATIENTS

Emil Elhanan[1], Mona Boaz[2,3], Gil Chernin[1,4], Doron Schwartz D[1,4], Talia Weinstein[1,4]

[1]Nephrology Institute, Tel Aviv Medical Center; [2]Nephrology Institute, Wolfson Medical Center; [3]Ariel University; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

SciBVac™ (SciVac Israel, Rehovot, Israel) is a novel, third generation anti-HBV recombinant vaccine produced via expression of the S, pre-S1 and pre-S2 protein components of HBsAg in Chinese hamster ovary cells.

The aim of this study was to compare the immunogenicity of two hepatitis B vaccines in dialysis patients: the third generation SciBVac™ (three doses, 10 µg each, at 0, 1, and 6 months in naïve patients or three doses, 20 µg each in previous non-responders) vs. second generation Engerix B® (four doses, 40 µg each, at 0, 1, 2, and 6 months). Immunogenicity was estimated by measuring seroconversion rates, defined as antibody titers of ≥ 10 IU/L one month after completing the study.

All eligible dialysis patients at Tel Aviv Medical Center were approached, 90 agreed to participate, and 86 completed the study: 43 received each vaccine. Mean age was 66.8+/-14.3 yrs, and the distribution of gender, age and DM was similar in both groups. In the total cohort, 66.7% of Engerix vs. 71.8% of SciBVac patients were qualitively positive at the end of the study, p=0.62. The mean titer in the Engerix group was 207+/-336, (median 22.7), and in the SciBVac group 293+/-393, (median 78.6), p=0.27. Among naïve patients, following vaccination 54.2% of Engerix vs. 62.5% of SciBVac patients were qualitively positive, p=0.72. The mean titer in the Engerix group was 171+/-324 (median 12.7), and in the SciBVac group 261+/-380 (median 41.9), p=0.52. Among non-responders, 86.7% developed seroprotection. The mean titer in the Engerix group was 269+/-338 (median 115), and in the SciBVac group 344+/-399 (median 111), p=0.52.

In summary, SciBVac vaccination was equally effective to Engerix in inducing seroprotection in dialysis patients. Although seroprotection rates and antibody titers were higher in patients vaccinated with SciBVac, this did not reach significance, perhaps due to the small sample size.

EXPOSURE TO SUB-THERAPEUTIC TACROLIMUS LEVELS IMMEDIATELY AFTER KIDNEY TRANSPLANTATION IS ASSOCIATED WITH INCREASED RISK OF GRAFT LOSS

Benaya Rozen-Zvi[1,3], Shira Schneider[1], Boris Zingermn[1,3], Eytan Mor[2,3], Uzi Gafter[1,3], Ruth Rahamimov[1,2,3].

[1]Nephrology and Hypertension Department; [2]Organ Transplantation Department, Rabin Medical Center, Petah Tikva, Israel; [3]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Background:

The association between sub-therapeutic tacrolimus levels at the early post-transplant period with patient and graft survival has not been studied.

Methods:

This study used registry data to examine the association between tacrolimus levels (first 6 months) and graft survival. Cox regression analysis was used for univariate and multivariate associations between graft survival and mortality, in 749 patients. All the patients with at least one tacrolimus value below 5 ng/ml were grouped together ('below target' group) and were compared with the patients whose tacrolimus values were above 5 ng/ml.

Results:

'Below target' group was associated with inferior graft and patient survival in the univariate and multivariate models (HR 1.93; 95% CI 1.34 to 2.78; p<0.001 and HR 1.6; 95% CI 1.09 to 2.38; p=0.018, respectively). The 'below target' group was also associated with inferior death censored graft survival in univariate (hazard ratio [HR] 2.6; 95% confidence interval [CI] 1.56 to 4.35; p<0.001) and multivariate models (HR 1.77; 95% CI 1.024 to 3.15; p=0.041). It was also associated with increased mortality in the multivariate model (HR 1.7; 95% CI 0.1.01 to 2.87; p=0.047)

Conclusion:

Exposure to sub-therapeutic tacrolimus levels during the early post-transplant period is associated with inferior graft survival.

THE IMPACT OF THE ISRAELI TRANSPLANTATION LAW ON THE SOCIODEMOGRAPHIC PROFILE OF LIVING KIDNEY DONORS

Hagay Boas[1], Eytan Mor[2,4], Michowitz R[2], Benaya Rozen Zvi[3,4], Ruth Rahamimov[2,3,4]
[1]Edmond J. Safra Center for Ethics, Tel Aviv University; [2]Department of Transplantation; [3]Department of Nephrology, Rabin Medical Center, Beilinsonl Petah-Tikwa; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Background: the legislation of the Israeli transplantation law at 2008 stipulated any association of third party in organ trading as a criminal offense. In this study we evaluated the differences in living kidney donation patterns in the largest Israeli transplantation center before and after the law enactment.

Methods: We compared the socio-demographic features of 475 living donors 54 months prior to and after the implementation of the law.

Results: Living kidney donations has increased from 3.59±1.25 donations per month prior to the law to 5.2±2.17 after the law ($p<0.001$). This increased rate was mainly due to a rise in intra-familial donations from 2.09±1.09 per month prior to the law to 3.78±2.03 per month ($p<0.001$) after the law. In the non-related donors we found a significant change in the socio-demographic characteristics: an increase in the proportion of women (17.3% to 41.3% ;$p<0.001$), married donors (51.3% to 74.3%; $p = 0.004$) and donors above 41 years of age (25% to 51%:$p =0.001$). There was also a significant increase in the mean number of offspring (1.88±1.72 to 3. 69±2. 90 ,$p<0.001$) and the proportion of donors with academic education (30.8% to 58.3% ; $p =0.002$). and donors in white collar positions (20.5% to 44.8%, $p=0.006$).
In the non related group there was also a significant reduction in the rate of donors younger than 40 donating to older patients from 50% in the pre-law era to 21.7% after the law enactment ($p=0.004$) as well as reduction in the The percentage of donor without higher education donating to a patient with academic degree from 30% in the pre-law period to 13% after the law ($p=0.024$)

Conclusions: The transplant law enactment was associated with increased overall number of living kidney donations, and changed the socio-demographic profile of unrelated donors .

RECURRENCE OF MEMBRANOPROLIFERATIVE GLOMERULONEPHRITIS TYPE I AFTER KIDNEY TRANSPLANTATION –17 YEARS' EXPERIENCE OF A SINGLE CENTER

Hefziba Green[1,3], Ruth Rahamimov[1,3], Eitan Mor[2,3], Uzi Gafter[1,3]
[1]Department of Nephrology and Hypertension, Rabin medical center, Petah-Tikva; [2]Department of transplantation, Rabin medical center, Petah-Tikva; [3]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Background: The reported outcome of kidney transplantation in patients with membranoproliferative glomerulonephritis (MPGM) type 1 is relatively poor. Our institute is the major kidney transplant center in Israel. We report our 17-years' experience with transplantation for patients with MPGM type1.

Methods: Retrospective cohort study. Our aim was to analyzed the recurrence rate, graft survival and risk factors for recurrence. Patients were identified from electronic data base, and data was extracted through patient chart review. The diagnosis of recurrent MPGN type I required specific pathological findings and was not based on clinical criteria.

Results: Between the years 1995-2012, forty-eight out of 1882 transplantations were done in forty-four patients with MPGN type 1. Twenty-seven (57%) transplantation were from living donors. Overall patient survival was 100%, 97.7% and 87.7% at 1, 5 and 10 years respectively. Five- year, 10- year and 15- year overall graft survival rates were 76%, 51% and 34% respectively. Death- censored 5- year, 10 – year and 15- year graft survival rates were 80%, 61% and 53% respectively. There were total of 11 episodes of recurrence of MPGN in eight patients (23%). All episodes of recurrence were diagnosed within 5.8 years after transplantation, five of them in the first year. Median time to recurrence was 14.8 months. Five –year graft survival was 10% in recurrence patients versus 93% in non-recurrent. In univariate analysis there was a significant association between recurrence of MPGN and the presence of HLA B49 allele, low level of C3 and Arab ethnic origin. Recurrence occurred almost equally for living- and deceased donor recipients

Conclusions: Graft survival rate for patients with MPGN type 1 in our cohort is compatible with other reports; however graft loss rate as a result of disease recurrence was higher. Several new variables were found to be associated with recurrence.

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Session 6

HAPTOGLOBIN 2-2 GENOTYPE IS ASSOCIATED WITH DECREASED LEVELS OF ACTIVE VITAMIN D AND ACCELERATED RENAL APOPTOSIS IN DIABETIC NEPHROPATHY MICE AND PATIENTS

Inbal Dahan[1], Nadia Thawho[1], Farid Nakhoul[1], Evgeny Farber[1], Ofer Ben-Itzhak[2], Rachel-Miller-Lotan[2] and Andrew P Levy[2]
[1]Diabetic Nephropathy Lab, Baruch-Padeh Poriya Medical Center, Lower Galilee, Faculty of Medicine, Bar-Ilan University, Galilee; [2]Department of Vascular Biology, Rappaport faculty of Medicine, Institute of Technology, Haifa.

Introduction: Haptoglobin (Hp) is an antioxidant protein by virtue of its ability to binds free hemoglobin and prevents heme-iron mediated oxidation. Diabetic mice with different Hp genotype (1-1, 2-2) have a different susceptibility to developed Diabetic Nephropathy (DN). Hp 2-2 diabetic mice have impaired hemoglobin clearance and increased iron deposits in the lysosomes of the kidney proximal tubules (PCT), leading to increased renal oxidative stress. Patients and mice with chronic kidney disease (CKD) have decreased renal expression of the anti-oxidant, klotho and low plasma levels of active 1,25-dihydroxy vitamin D. It is known that DN includes proximal tubular injury but the precise mechanism behind it remains elusive and need to be determined.

Aims: We are exploring whether the increased iron deposits in the renal PCT of Hp2-2 genotype, as well as the decrease in renal klotho expression, generate a pro-oxidative environment, leading to high level of PCT apoptosis. Subsequently it interferes with vitamin D activation by 1-α-hydroxylase.

Methods: Slides from kidney biopsies of DN patients and mice with different Hp genotype (1-1, 2-2) were subjected to Immunohistochemistry staining of iron, active caspase 3, vitamin D receptor (VDR) and 1-alpha hydroxylase by using specific antibodies.
Blood samples subjected to haptoglobin test and to laboratory evaluation and ELISA assays.

Results: There were increased iron deposits in the renal PCT of Hp2-2 DM patients, similarly to what we have demonstrated before in mice. Furthermore, in the PCT of Hp 2-2 mice and patients there was increase expression of active caspase-3 staining that was accompanied with decrease renal expression of vitamin D receptor and klotho levels.

Conclusion: Hp 2-2 genotype associated with increased iron deposits and high levels of PCT apoptosis. It further associated with decrease levels of the anti oxidant klotho and vitamin D receptor in the renal PCT. Based on our observations we propose a molecular mechanism explaining the influence of Hp genotype and klotho expression on renal PCT injury in DN patients. These results provide insights into genetic predisposition to develop active vitamin D deficiency in DN patients that correlates with sever renal damage.

AUTOLOGOUS BONE-MARROW STEM CELLS INDUCTION BY LOW-LEVEL LASER THERAPY CAN FACILITATE THE RECUPERATION OF THE INJURED KIDNEY

Uri Oron[1], Hana Tuby[1], Ramzia Abu Hamad[2,3], Lidya Maltz[1], Keren Donyas-Barak[2,3], Shai Efrati[2,3]

[1]Department of Zoology, The George S. Wise Faculty of Life Sciences, Tel-Aviv University, Israel; [2]Nephrology and Research and [3]Development Units Assaf-Harofeh Medical Center, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Introduction: Stem cells have been proposed as possible therapy that may induce renal regeneration and recuperation from renal injury. Unfortunately exogenous stem cell therapy has several obstacles that prevent its clinical use. A new method for induction of autologous bone-marrow stem cells by low-level laser therapy (LLLT) can facilitate the regeneration process in different models of ischemic-reperfusion injuries of the heart and brain. The therapeutically effects of autologous stem cells inducted by LLLT have not been investigated yet in models of kidney injury.

The aim of the current study was to investigate the effect of LLLT in an ischemic-reperfusion (IR) rat model of acute kidney injury (AKI).

Methods: AKI was induced by total excision of right kidney and 60 minutes of IR to the contralateral kidney. Rats were divided randomly into two groups, control and LLLT treated group. LLLT (Ga-Al-As 810nm, 200mW) was applied to the BM 10 minutes and 24 hours post-IR and rats were sacrificed 4 days post-IR. Blood was collected before sacrifice and the kidneys were excised for histopathological evaluation.

Results: Creatinine, blood urea nitrogen, and cystatin-C levels were significantly lower in the LLLT treated group compared to the control (55, 50 and 30% reduction respectively). Histological evaluation revealed restored structural integrity of the renal tubules and reduced necrosis in the LLLT treated group. In addition, stem cells (c-kit positive cells) density was significantly higher (2.4-fold higher) in the LLLT group compared to the control.

Conclusions: Autologous stem cells induction by LLLT application to the BM increase stem cells migration to the injured kidney and can facilitate the recuperation from the ischemic insult. The results demonstrate a novel approach that can be easily applied to patients if prove to be effective in future clinical trials.

THE EFFECTS OF GLUCAGON-LIKE- PEPTIDE 1(GLP1) AND VITAMIN D ON THE INFLAMMATORY RESPONSE OF ENDOTHELIAL CELLS EXPOSED TO A DIABETIC- LIKE ENVIRONMENT

Tali Zitman-Gal[1], Meital Ohana[1,2], Janice Green[1], Eliezer Golan[1,2], Jacques Bernheim[1,2], Sydney Benchetrit[1,2]

[1]Renal Physiology Laboratory, Department of Nephrology and Hypertension, Meir Medical Center, Kfar Saba, Israel; [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv.

Introduction:
High blood and tissue concentrations of glucose and advanced glycation end products (AGEs) play an important role in the development of diabetic vasculopathy. GLP-1, an incretin hormone has been shown to improve glycemic control by increasing the glucose stimulated insulin release. The non glycemic effects of GLP-1 have been shown to improve apoptosis, anti-oxidative and anti-inflammatory effects on endothelial cells. Vitamin D deficiency has been involved in the modulation of insulin release and in endothelial cell dysfunction in diabetes mellitus (DM).The aim of the study is to evaluate the effects of GLP1 agonist (Liraglitude) and calcitriol on the genes and proteins expression involved in the inflammatory regulation in endothelial cells exposed to a diabetic like environment.

Methods: Fresh human umbilical vein cord endothelial cells (HUVEC) were stimulated for 12 and 24 hours with 200 µg/ml human serum albumin (HSA) and 100 mg/dl glucose (control group) or 200 µg/ml AGE-HSA, and 250 mg/dl glucose (diabetic-like environment), Liraglitude (10nM and 100nM) and physiological concentrations (10^{-10} mol/l) of calcitriol. Total RNA and protein were extracted from the HUVEC and analyzed for the expression of selected inflammatory related markers such as TXNIP, NFκB (p65), IL8, IL6 and transcriptions factor from the Krüppel-like family (KLF2 and KLF4) by real time-PCR , western blot and ELISA.

Results : We showed that Liraglutide in a dose dependent manner (10 nM and 100nM) prevented the upregulated expressions of TXNIP,NFκB (p65), IL8, IL6 and KLF2 observed at 12h and 24h in HUVEC exposed to a diabetic like environment. These effects observed as early as 12 h after exposure were more pronounced at 24h. Addition of calcitriol (10^{-10}M/L) to Liraglutide did not improve the significant anti-inflammatory effects at the level of gene and protein expression observed with Liraglutide.

Conclusions: Liraglitude, a GLP-1 agonist prevented in a dose dependent manner the inflammatory response observed in HUVEC exposed to a diabetic like environment. The mechanisms of the lack of efficacy of calcitriol should be further clarified.

L-ARGININE IMPROVES ENDOTHELIAL FUNCTION, INDEPENDENT OF ARGININE UPTAKE, IN AORTAS FROM CHRONIC RENAL FAILURE FEMALE RATS

Inna Frolkis[1], Doron Schwartz[2,4], Tamara Chernichovski[2], Sharon Levi[2], Yael Pri-Paz[2], Aalexander Shtabsky[3], Idit F Schwartz[2,4]
[1]*Department of Cardiovascular Surgery;* [2]*Nephrology Institute*; [3]Pathology Institute; Tel Aviv Medical Center; [4]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

Endothelial cell dysfunction (ECD) is a common feature of chronic renal failure (CRF). Defective nitric oxide (NO) generation due to decreased endothelial nitric oxide synthase (eNOS) activity is a crucial parameter characterizing ECD. Decreased activity of cationic amino acid transporter-1 (CAT-1), the selective arginine transporter of eNOS, has been shown to inhibit eNOS in uremia. Recently, we failed to demonstrate a decrease in glomerular arginine transport in uremic female rats**.** The current experiments were designed to determine whether sexual dimorphism which characterizes glomerular arginine transport system in uremia involves the systemic vasculature as well and to assess the effect of L-arginine in such conditions. Contractile and vasodilatory responses, ultrastructural changes, and measures of the L-arginine NO system were performed in thoracic aortas of female rats subjected to 5/6 nephrectomy.
Contractile response to KCl was significantly reduced and acetylcholine induced vasodilation was significantly impaired in aortas from CRF dames when compared to healthy rats. Both these findings were prevented by the administration of arginine in the drinking water.
The decrease in both cGMP generation, a measure of eNOS activity, and aortic eNOS and phosphorylated eNOS abundance observed in CRF rats were completely abolished by L-arginine, while arginine transport and CAT-1 protein were unchanged in all experimental groups. Arginine decreased both serum levels of advanced glycation end products and ADMA/arginine ratio and restored endothelial ultrastructure in CRF rats. In conclusion: Arginine administration has a profound beneficial effect on ECD independent of cellular arginine uptake, in CRF female rats.

Fn14•TRAIL EFFECTIVELY ACTIVATES PRO-APOPTOTIC SIGNALS AND ABOROGATES ANTI-APOPTOTIC ONES, LEADING TO INHIBITION OF RENAL CELL CARCINOMA GROWTH

Keren Tzukert[1], Kobi Tzdaka[1], Shira Amsili[3], Tatyana B. Prigozhina[1], Itamar Sagiv[1,] Alexandra Aronin[1], Roy Shen[1], Leonid Grinman[1], Jacob Rachmilewitz[2], Fanny Shkedy Szafer[3], Noam Shani[3], Mark L. Tykocinski[4], Michal Dranitzki Elhalel[1]

[1]Nephrology and Hypertension Services, Hadassah-Hebrew University Medical Center, Jerusalem; [2]Goldyne Savad Institute of Gene Therapy, Hadassah-Hebrew University Medical Center, Jerusalem; [3]KAHR Medical LTD, Jerusalem; [4]Office of the Dean, Jefferson Medical College, Philadelphia, Pennsylvania USA.

Background: New strategies for the treatment of renal cell carcinoma (RCC) are needed, given that currently available chemotherapeutics are inefficient. Since tumor growth reflects the net balance between pro-proliferative and death signaling, agents shifting the equilibrium toward the latter are of considerable interest. The TWEAK:Fn14 signaling axis promotes tumor cell proliferation and tumor angiogenesis, while TRAIL:TRAIL-receptor (TRAIL-R) interactions selectively induce apoptosis in malignant cells. Fn14•TRAIL, a fusion protein bridging these two pathways, has the potential to inhibit tumor growth, by interfering with TWEAK:Fn14 signaling, while at the same time enforcing TRAIL:TRAIL-R-mediated apoptosis. Consequently, Fn14•TRAIL's capacity to inhibit RCC growth was tested.

Results: Fn14•TRAIL induced robust apoptosis of multiple RCC cell lines, while sparing non-malignant hepatocyte cell lines. Differential susceptibility to this agent did not correlate with expression levels of TRAIL, TRAIL-R, TWEAK and Fn14 by these lines, however it inversely correlated with the expression of the TRAIL decoy receptors. Fn14•TRAIL 's effect was caspases dependent. Fn14•TRAIL efficieantly activated both extrinsic and intrinsic caspases cascades, and significantly decreased the expression of the anti-apoptotic proteins cFLIP, cIAP2 and BCL2. Importantly, subcutaneous injection of Fn14•TRAIL inhibited RCC growth in a xenograft model in a dose dependent manner, and was well tolerated by the mice. Tumors harvested from Fn14•TRAIL treated mice stained positive with anti-cleaved caspase 3, indicating active apoptosis of the tumor cells.

Conclusions: In this study, Fn14•TRAIL, a multifunctional fusion protein was shown to inhibit the growth of RCC, both *in vitro* and *in vivo*. The demonstration of this fusion protein's potent anti-tumor activity suggests that simultaneous targeting of two signaling axes by a single fusion can serve as a basis for highly effective anti-cancer therapies.

DEPRESSED BONE ERYTHROPOIETIN RECEPTOR IN A RAT MODEL OF ANEMIA AND CHRONIC KIDNEY DISEASE

Lital London[1,3], Yael Segev[1,3], Daniel Landau[2,3]
[1]Shraga Segal Department of Immunology; [2]Pediatrics Department; [3]Faculty of Health Sciences, Ben Gurion University, Beer Sheva.

רקע: אנמיה היא סיבוך ידוע במחלת כליות כרונית (CKD) ועלולה לתרום גם לעיכוב בגדילה בילדים עם מחלה זאת. הסיבה העיקרית המוזכרת לסיבוך זה היא ירידה בסינתזת האריתרופואטין (EPO) בעקבות ירידה במסה הכלייתית. ידוע גם כי hypoxia inducible factor 1α (HIF1α) מופרש מתאים שונים במצבי היפוקסיה מעודד בין היתר ייצור של EPO, אשר פועל על התאים האריתרובלסטיים במח העצם (וברקמות אחרות) דרך הקולטן שלו (EPOR), במסלול המתווך דרך JAK2-STAT5. עבודות קודמות במעבדתנו הדגימו כי בעת עיכוב בגדילה הקשור ל- CKD יש ירידה בהעברת האותות דרך הקולטן ל- GH בלוחית הגדילה האפיפיזאלית (EGP) (הסמוכה לאזור ה- bone marrow niche): ירידה בזרחון של JAK2-STAT5 בעקבות עלייה במעכב SOCS2 וירידה ב- VEGF. אין מידע על הביטוי והעברת האותות דרך EPOR ב- CKD.

שיטות: חולדות SPD צעירות ממין זכר (בני 20 יום) שמשו לניסוי. מצב ה- CKD הושרה ע"י ניתוח nephrectomy 5/6 בעוד שחולדות הביקורת עברו ניתוח דמה. בוצע מעקב אחר גדילה סומטית במהלך הניסוי. לאחר 14 יום החולדות הוקרבו ודם ושתן נאספו בעת ההקרבה. בוצע בידוד של רקמת כליה, EGP מעצם הטיביה הקריבנית ותאי מח עצם, אשר שימשו לאנליזת חלבונים, mRNA אימונו היסטוכימיה ואנליזת FACS.

תוצאות: נצפה עיכוב משמעותי בעלייה במשקל ובאורך הגוף במהלך הניסוי בקבוצת CKD בהשוואה לביקורת. רמות המוגלובין היו נמוכות משמעותית בקבוצת CKD (11.7 ± 0.4 לעומת 14.3 ± 0.2 גר\ד"ל , $p<0.0001$). רמות החלבונים של EPO ו-EPOR בכליה היו ללא שינוי בין הקבוצות, בעוד שרמות EPOR ב- EGP היו נמוכות ב-CKD (40.1±5.4 לעומת 100±12.7% בקב' ביקורת). אנליזת Real-time PCR הראתה רמות EPOR mRNA נמוכות ב- EGP (0.57±0.1 מהביקורת בהשוואה ל 1.15± 0.19), יחד עם רמות HIF1α נמוכות בקבוצת CKD (0.73±0.05 מהביקורת בהשוואה לפי 1.16±0.15). מתן מנה בודדת של EPO (1000U/Kg IV) 15 דקות לפני ההקרבה גרמה לעליה משמעותית ברמות pSTAT5 בלוחיות הגדילה בחולדות ביקורת.

לסיכום: אנמיה בחולדות CKD צעירות לא קשורה ברמות EPO נמוכות בכליה, אך רמות EPOR באזור לוחית הגדילה של העצם הן נמוכות. רמות HIF1α לא עלו למרות האנמיה. אנו מניחים שדיכוי זה של HIF1α ושל EPOR (ושל האותות המועברים דרכו) בעצם מהווים מנגנון חשוב באנמיה של CKD ועשויים להסביר מצבי עמידות ל- EPO השכיחים ב- CKD.

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Session 10

FREQUENT HOME DIALYSIS IN ISRAEL: A REPORT ON THE FIRST PATIENT

Jayson Rappaport[1,2,3]
[1]Dialysis Unit, Assuta Hospital Tel-Aviv; [2]Kaplan Medical Center Rehovot; [3]Faculty of Medicine, Hebrew University, Jerusalem.

I wish to report the first patient receiving frequent home hemodialysis in Israel for the past 18 months.
The patient is a 43 year old married woman, suffering from ESRD due to IgA Nephropathy. She has been on renal replacement therapy for 23 years. She received 3 failed transplants in the past (1990, 1992, 1994), and had received CAPD in the past, which was stopped because of membrane failure. She had been receiving three 5-hour hemodialyses per week in a community unit, but did not feel well, and found it difficult to maintain a normal life style, including full-time work. She is a very independent-minded person, extremely knowledgeable about dialysis, and inserts her own needles. She was trained, together with her husband, brother and mother, in the technique, and after preparing a room at home (the balcony) with installation of reverse osmosis and dialysis machines, home hemodialysis was begun in August 2012, with no technical problems. She performs six 2.5h dialyses a week using a high-flux Elisio dialyzer (1.9m^2). Average weight gain 1.5kg/d, blood pressure 133/70 – 113/62, current antihypertensive treatment Atacand 4mg/d only. Ca 8.8mg/dl, P 4.1mg/dl, PTH 452pg/ml, albumin 4.2g/dl. She continues to receive Fosrenol 750mg x 3 and Zemplar 2.5 g 3/week. In general, she feels very well and works full-time. Home dialysis has had a considerable impact on her quality of life.
We recommend the use of frequent home hemodialysis for suitable patients.

EFFECT OF DIALYSATE CALCIUM CONCENTRATIONS ON INTRA-DIALYTIC IRON ASSOCIATED PROTEIN OXIDATION

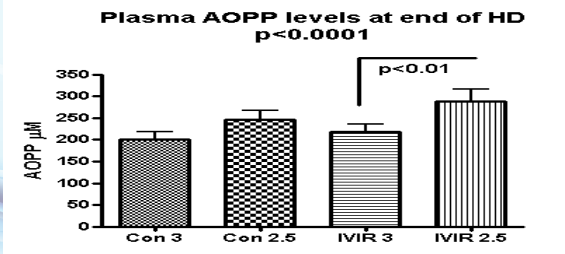
Amir Abd Elkadir[1], Shimon Storch[2], Rephael Geri[3], Amos Douvdevani[4], David Tovbin[5]. [1]Biomedical Engineering; [2]Nephrology, Bnai Zion Medical Center, Haifa; [3]Nephrology Unit, Rivka Ziv Medical Center, Safed; [4]Nephrology Laboratory- Soroka Medical Center, Beer-Sheva; [5]Nephrology Department, HaEmek Medical Center, Afula, Israel.

Introduction: Intra-dialytic intravenous iron (IVIR) in hemodialysis (HD) is required for anemia correction. However, IVIR compounds release to the plasma small amounts of iron which can bind to transferrin and to ligands other than transferrin (non-transferin bound iron-NTBI) including proteins and increase oxidative stress. Proteins (mainly albumin) can get oxidized to advanced oxidation protein products (AOPP), which are predictors of atherosclerosis. Calcium (Ca) binding to albumin decreases its' binding to iron. Thus, we hypothesized that high dialysate Ca (HCa-3 mEq/L) as compared to low dialysate Ca (LCa-2.5 mEq/L) decreases IVIR associated albumin oxidation and AOPP levels.

Methods: In a prospective randomized crossover multicenter study, 23 HD patients on high flux dialyzers (FX80, Fresenius) were evaluated on HCa and LCa (after at least 1 week on each and 2-week washout between) without and 1 week later with IVIR (100 mg iron saccharate in 1st HD hour to arterial HD line). Evaluation included plasma AOPP levels and was performed mid-weekly at HD-start, 1 hour and HD-end. Statistical analysis uses non-parametric tests. Data is presented as mean (SD).

Results: Plasma ionic Ca increased only on HCa in HD without and with IVIR from HD-start to 1 hour and HD-end [0.94(0.18) mM, 1.08(0.18) mM, 1.11(0.17) mM, $p<0.001$ and 0.94(0.18 mM), 1.08(0.18) mM, 1.11(0.17) mM, $p<0.01$, respectively]. Plasma AOPP levels were higher in HD with IVIR than in HD without IVIR at 1 hour on both HCa and LCa [249(105) µM vs 161(57) µM and 299(136) µM vs 214(123) µM, respectively, both $p<0.01$]. In HD with IVIR, HCa was associated with lower plasma AOPP levels than in LCa at HD-end [218(80) µM vs 288(136) µM, respectively, $p<0.01$, Fig].

Conclusions: HCa dialysate may be associated with lower plasma AOPP levels in HD with IVIR, possibly by reducing iron binding to albumin. Thus, though HCa dialysate may not be appropriate for most HD sessions, our study may suggest that it may be beneficial in reducing IVIR related oxidative stress in HD with IVIR.



SEVERITY OF PULMONARY HYPERTENSION IS ASSOCIATED WITH HAPTOGLOBIN 2-2 GENOTYPE IN DIABETIC HEMODIALYSIS PATIENTS

Evgeny Farber[1], Farid Nakhoul[1], Inbal Dahan[1], Nadia Thawho[1], Rachel-Miller-Lotan[2], Andrew P Levy[2]

[1]Diabetic Nephropathy Lab, Baruch- Padeh Poriya Medical Center, Lower Galilee, Faculty of Medicine, Bar-Ilan University, Galilee; [2]Department of Vascular Biology, Rappaport faculty of Medicine, Institute of Technology, Haifa.

Introduction: Haptoglobin (Hp) is an antioxidant protein by virtue of its ability to binds free hemoglobin (Hb) and prevents heme-iron mediated oxidation. The Hp1 protein is superior to the Hp2 protein in binding to free Hb and neutralizing its oxidative potential. The difference between the Hp genotype is exaggerated in the diabetic state as extracorpuscular Hb is increased due to impaired ability of Hp to binds Hb when hemoglobin becomes glycated.

Pulmonary hypertension (PH) is an elevation of pulmonary arterial pressure (PAP) that is recently recognized as complication of chronic kidney disease and end-stage renal disease. Hemodialysis patients had a significantly unexplained higher PH and it is an independent predictor of increased mortality in these patients. Thus, understanding the factors that contribute to increasing rates of PH is of critical importance.

Aim: We are exploring whether Hp genotype polymorphism associated with increased pulmonary hypertension in diabetic and non diabetic dialysis patients.

Methods: 42 CKD patients on hemodialysis treatment are included in the research. 28 patients are Diabetic. All patients screened for Hp genotyping. Clinical parameters such as PTH, albumin, creatinin, phosphorus and calcium were measured by laboratory evaluation. Arterial pulmonary pressure (PAP), LVEDD and LVESD was measured by transthoracic echocardiography.

Results: Diabetic patients with Hp 2-2 genotype have a significantly higher pulmonary hypertension compared with Diabetic patients with Hp-1-1 or Hp 2-1 genotype. Furthermore, Hp 2-2 Diabetic patients have significantly higher PAP, LEVDD and LVESD parameters compared with the Hp2-2 non diabetic patients. The most significant differences are in PAP parameter.

Conclusion: Diabetic patients with Hp 2-2 genotype have higher pulmonary hypertension compared with Hp 1-1 or 2-1 and with non diabetic Hp2-2 genotype. We propose a molecular explanation for the higher pulmonary hypertension among dialysis patients with diabetes. These observations are of critical importance since PH in Dialysis patients has a direct influence on their survival.

SERUM URIC ACID AS A CLINICALLY USEFUL NUTRITIONAL MARKER AND PREDICTOR OF OUTCOME IN MAINTENANCE HEMODIALYSIS PATIENTS

Ilia Beberashvili[1,2], Inna Sinuani[3], Ada Azar[4], Gregory Shapiro[1], Leonid Feldman[1,2], Kobi Stav[2,5], Zhan Averbukh[1,2]

[1]Nephrology Department, Assaf Harofeh Medical Center, Zerifin; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv; [3]Pathology Department, Assaf Harofeh Medical Center, Zerifin; [4]Nutrition Department, Assaf Harofeh Medical Center, Zerifin; [5]Urology Department, Assaf Harofeh Medical Center, Zerifin.

Background: The importance of serum uric acid (SUA) for maintenance hemodialysis (MHD) population has not been well established. We hypothesized that SUA levels may be associated with nutritional risk and consequently with adverse clinical outcomes in MHD patients.

Methods: A two-year prospective observational study of MHD patients performed on 261 MHD outpatients (38.7% women) with a mean age of 68.6±13.6 years. Prospective all-cause and cardiovascular (CV) hospitalization and mortality, nutritional scores (malnutrition-inflammation score (MIS), and geriatric nutritional risk index (GNRI)), hand-grip strength (HGS), and short form 36 (SF-36) quality-of-life (QoL) scores were measured.

Results: SUA positively correlated with laboratory nutritional markers (albumin, creatinine), with body composition parameters, with HGS ($r=0.26$, $p<0.001$) and with GNRI ($r=0.34$, $p<0.001$). SUA negatively correlated with MIS ($r=-0.33$, $p<0.001$) and interleukin 6 ($r=-0.13$, $p=0.04$). Patients in the highest SUA tertile had higher total SF-36 scores ($p=0.04$), higher physical functioning ($p=0.003$) and role-physical ($p=0.006$) SF-36 scales. For each 1.0 mg/dL increase in baseline SUA levels, the first hospitalization hazard ratio (HR) was 0.79 (95% confidence interval (CI), 0.68 to 0.91) and first CV event HR was 0.60 (95% CI, 0.44 to 0.82); all-cause death HR was 0.55 (95% CI, 0.43 to 0.72) and CV death HR was 0.55 (95% CI, 0.35-0.80). Associations between SUA and mortality risk continued to be significant after adjustments for various confounders including MIS and interleukin 6. Cubic spline survival models confirmed linear trends.

Conclusions: In MHD patients, SUA is a good nutritional marker and associates with body composition, muscle function, inflammation, and health-related QoL, upcoming hospitalizations, as well as independently predicting all-cause and cardiovascular death risk.

AN INCREASE IN INTERLEUKIN 6 LEVEL DURING A HEMODIALYSIS SESSION IS ASSOCIATED WITH MORTALITY

Shelly Lichtenberg[1], Asher Korzets[1,2], Yaacov Ori[1,2], Arie Erman[1], Uzi Gafter[1,2], Benaya Rozen-Zvi[1,2]

[1]Department of Nephrology and Hypertension, Rabin Medical Center, Beilinson Campus, Petah Tikva; [2]Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv.

BACKGROUND: *The inflammatory marker interleukin (IL-6) increases early in the inflammatory cascade. The aim of this study was to evaluate the prognostic value of an increase in serum IL-6 level during a single HD session, on mortality among HD patients.*

METHODS: 57 adult patients treated with HD in Rabin Medical Center dialysis units for a duration of more than one month, were prospectively studied over a 3 year follow-up. Demographic and clinical data was collected. Blood samples were drawn before and after a midweek HD session, the post-dialysis serum levels of CRP and IL-6 were adjusted for the effect of ultrafiltration. Events of death and censoring were recorded.

RESULTS: An increase in serum IL-6 level during a HD session was documented in 60% of the patients. During a three-year follow-up 50% of the HD patients in our study had died.
In univariate Cox regression analysis, all-cause mortality was associated with an increase in IL-6 during dialysis (HR 1.41 per ng/ml; 95% CI 1.06 to 1.88; p=0.017), older age (HR 1.07 per ng/ml; 95% CI 1.04 to 1.1; p<0.001) and lower baseline creatinine level (HR 0.78 per ng/ml; 95% CI 0.66 to 0.92; p=0.03). In multivariate Cox models, the only independent predictors of all-cause mortality were: an increase in IL-6 level during dialysis (HR 1.46 per ng/ml; 95% CI 1.08 to 1.98; p=0.014), higher baseline CRP level (HR 1.63 per ng/ml; 95% CI 1.14 to 2.34; p=0.007) and older age (HR 1.08 per year; 95% CI 1.04 to 1.13; p<0.001). When predictors of an increase in serum IL-6 during dialysis were introduced into the model, mortality was still significantly associated IL-6 elevation during dialysis (HR 1.78 per ng/ml, 95% CI 1.22 to 2.58; p=0.003).

CONCLUSIONS:
IL-6 elevation during a single HD session is associated with a higher mortality risk among HD patients, independent of predialysis CRP or IL-6 levels. The results may imply the presence of an intradialytic inflammatoy response that affects survival.

SPINAL ISCHEMIC STROKE FOLOWING DIALYSIS: CLINICAL AND RADIOLOGICAL FINDINGS

Ronen Schneider[1], Asaf Honig[2], John Gomori[3], Chen Makranz[2], Ronen Leker[2]
[1]Department of Nephrology; [2]Department of Neurology; [3]Department of Radiology; all in Hadassah-Hebrew University Medical Center, Jerusalem.

Introduction: Hypotension during hemodialysis (HD) is a well described phenomenon with many possible reasons like changes in plasma osmolarity, large fluid shifts, inaccurate dry weight assessment, comorbidities and more. Some of the complications of low blood pressure during dialysis are vascular access thrombosis, Non-Occlusive Mesenteric Ischemia (NOMI) and increased mortality. Spinal cord ischemia (SCI) is a relatively common cause of noncompressive myelopathy, manifesting as acute painful paraparesis. Most infarcts affect the central parts of the anterior spinal artery supply. Outcome depends on the initial severity of the neurologic deficits and may be surprisingly benign. Our goal was to describe SCI as a potential complication of hemodialysis associated hypoperfusion.

Methods: We retrospectively searched our prospective stroke database for patients with SCI during 2011.The institutional review board (Hadassah Medical Organization) authorized anonymous inclusion of patients into the database without informed consent.

Results: We identified five consecutive patients on chronic hemodialysis that developed acute motor, sensory, and autonomic dysfunction within 24 hours from hemodialysis. During the same period, 650 patients with stroke were treated at our center and approximately 10,000 dialysis treatments were performed accounting for an overall estimate of SCI associated with dialysis in 0.8% of strokes and 0.05% of all dialysis treatments. All included patients had significant vascular comorbidities. Four of the patients had concurrent systemic infections and three also had abdominal pain with suspected NOMI. The clinical presentation consisted of acute painless paraparesis, hypoesthesia and areflexia without pyramidal signs in all. Paraparesis worsened to a complete paraplegia within hours. A review of blood pressure records revealed that all patients had significant periods of hypotension during HD with significant decreases in median mean arterial pressure (MAP) values from 85 to 55mmHg ($p= 0.007$). Four patients had thoracolumbar MRI scans, which ruled out compressive disease and disclosed typical central ischemic lesions in the gray matter. MRI was not performed in one patient because of the presence of a pacemaker, but a myelography was normal. All patients had vascular imaging studies that ruled out aortic dissection or aneurysms. Three patients had lumbar punctures, which were negative for infection or inflammation. Clinical improvement was noted in one patient after an increase in MAP and slowing the dialysis rate.

Conclusions: Our study identifies hemodialysis as a pertinent risk factor for SCI. All of our patients had significant vascular comorbidities, which may have contributed to the hypoperfusion, making them more vulnerable to develop SCI.

Notes

הכנס בחסות:

מדיקל
טבע מדיקל בע"מ

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Boehringer Ingelheim

Lilly

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ALEXION

NOVARTIS PHARMACEUTICALS

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MSD

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Abbott
A Promise for Life

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