INTERNATIONAL CONFERENCE FOR STUDENTS AND RESIDENT DOCTORS IN NEPHROLOGY

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ABSTRACT BOOK

FACULTAS MEDICINAE 1781 UNIVERSITAS VILNENSIS

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27 April 2023

VILNIUS

ABSTRACT BOOK

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WINNERS OF THE CONFERENCE

Oral presentation section:

1 st place - RENAL ALLOGRAFT HISTOLOGICAL INJURIES IN BIOPSIES PERFORMED BETWEEN 5 AND 10 YEARS AFTER TRANSPLANTATION. **Rytis Stankevičius**

2 nd place - GLP1 ANALOG USE FOR KIDNEY TRANSPLANT IN OBESE PATIENT WITH AUTOSOMAL POLYCYSTIC KIDNEY DISEASE (ADPKD). **Nivedita Gopinath**

3 rd place – RISK FACTORS FOR ACUTE KIDNEY INJURY IN ADULT PATIENTS WITH SARS-COV-2 INFECTION. **Luīza Matuseviča** and **Mareks Kramēns**

3 rd place - WHAT'S BEHIND THE MANIFESTATION OF BORDETELLA PERTUSSIS IN RENAL TRANSPLANT RECIPIENT? **Viktorija Urbanovič** and **Kamilė Čeponytė**

E-poster section:

1 st place - THE UTILITY OF DIGITAL EPIDEMIOLOGY IN PREDICTING COVID-19 OUTBREAKS AND SYMPTOMATOLOGY CHANGES. **Jakub Radziwon** and **Maciej Lubiejewski**

2 nd place - BLADDER RUPTURE PRESENTING AS ACUTE KIDNEY INJURY IN A PATIENT WITH HISTORY OF RADIOTHERAPY. **Rytis Stankevičius**

3 rd place – HYPERTENSION AFTER KIDNEY TRANSPLANTATION. **Radoslavas Stasilo**

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A CASE OF GRANULOMATOSIS WITH POLYANGIITIS AND RAPIDLY PROGRESSIVE GLOMERULONEPHRITIS

Author: Radoslavas Stasilo, 5th year

Supervisor: M.D. Artūras Vinikovas, Assoc. Prof. L. Rimševičius. Gastroenterology, nephrourology and surgery clinic.

Vilnius University, Vilnius, Lithuania

Keywords: granulomatosis with polyangiitis; rapidly progressive glomerulonephritis; crescentic glomerulonephritis

Introduction: The case report presents a 26-year-old male patient with rapidly progressive glomerulonephritis due to granulomatosis with polyangiitis (GPA) and highlights the importance of fast evaluation and treatment of acute kidney injury.

Case description: A 26-year-old man with a history of muscle pain, subfebrile temperature and sore throat which was treated with Tab. Amoxicillini et clavulani, presented to the local emergency department referring to worsening symptoms and febrile temperature. From the life anamnesis, it was learned that the patient has frequent rhinitis and nasal congestion. The initial physical examination was without pathological changes. Laboratories showed Haemoglobin 124 g/l; CRB 88,2 mg/l; Procalcitonin 0,22 qg/l; LDH 295 U/L; Creatinine 176 qmol/l; eGFR (CKD-EPI) 45 ml/min/1,73m2; Urinalysis: Specific gravity 1,007; Protein 1 g/l; Blood in urine 10mg/l; Erythrocytes 358/HPF; Leukocytes 25 /qL; Urine was cloudy and pink. In nephrology department immunological c-ANCA and PR3 antibodies tests were positive. Kidney biopsy revealed necrotizing and crescentic glomerulonephritis. On 2022-03-10 concilium diagnosed GPA with rapidly progressive glomerulonephritis treated patient according to KDIGO 2021 guidelines: Rituximab 500 mg IV once a week (4 doses). Added cyclophosphamide 750 mg when creatinine was > 354 qmol/l (dose was adjusted to GFR). Additionally, three methylprednisolone 1000 mg IV pulses were given to the patient and later on oral 48 mg of methylprednisolone daily. After 3 weeks patient has been discharged from the hospital.

Discussion: GPA is an unpredictable disease which can develop suddenly and manifest in different ways. First warning signs can usually include sinuses, throat, lungs. Disease can affect ears, heart, gastrointestinal system and as in our case kidneys. The classical presentation of rapidly progressive glomerulonephritis is associated with haematuria, proteinuria, rapid progressive deterioration of renal function.

Conclusions: The case report aimed to show that sinusitis, muscle pain, mild anaemia can be associated with GPA which can suddenly progress to ominous renal disease.

ENVARSUS – A PRACTICAL EXPERIENCE

PATIENT CASE AFTER BARIATRIC SURGERY

Author: Marcin Wczysła, 4th year

Supervisor: Łukasz Zdrojewski, M.D.

Medical Univeristy of Gdańsk, Gdańsk, Poland

Keywords. Obesity; Bariatric surgery; Transplant

Introduction. Qualification process for transplant in patients with advanced CKD takes into consideration risks of the procedure and possible benefits. Obese patients remain difficult to qualify due to increased risk for post-operative complications. Both non-obese and obese patients benefit from transplant as compared to those who remain on dialysis. Despite this, obesity impacts the access to kidney transplant. It is therefore recommended that obese patients should reduce weight before transplantation.

Case Description. Obese 54 year old woman, with CKD treated by dialysis and other comorbidities. Treatment of obesity proved ineffective, qualifying the patient for ROUX en Y bypass surgery. The patient lost weight qualifying her for a kidney transplant. After transplantation cyclosporin levels did not reach therapeutic levels, this was attributed to lesser absorption from the gastrointestinal system due to the bariatric surgery. Cyclosporine was exchanged for tacrolimus (Envarsus) which is characterized by absorption throughout the whole small intestine, ultimately achieving the satisfying therapeutic effect.

Discussion. Optimal management strategies and treatment goals are not well defined for obese patients suffering from CKD. These patients benefit from transplantation but due to risk of complications the thresholds for qualifying these patients for transplantation among different clinics is a source of controversy. New suggestive approach is offered by GLP agonists as they may greatly increase the chance of achieving the desired target body weight without the need of surgical treatments or to delay wait-listing.

Conclusions. Obesity is linked with higher risk of post operative complications following kidney transplantation. Procedures such as bariatric surgery affect treatment choices after transplantation in these patients. In our clinic currently we have 15 patients which are treated with Envarsus. Despite being a small-scale observation, no problems with tolerance nor side effects as compared to other tacrolimus preparations have been noticed.

WHAT'S BEHIND THE MANIFESTATION OF BORDETELLA PERTUSSIS IN RENAL TRANSPLANT RECIPIENT?

Authors: Viktorija Urbanovič 4th year, Kamilė Čeponytė 4th year

Supervisor: Marius Miglinas, M.D., PhD, Prof.

Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Gastroenterology, Nephrourology and Surgery

Vilnius, Lithuania

Keywords. Bordetella pertussis; renal transplantation; whooping cough.

Introduction. Whooping cough is a respiratory infection, whose severity differs with age, immune status, and other factors as the degree of exposure and the virulence of the most frequent causative agent - *Bordetella pertussis*.

Case description. A 52-years-old man complained of shortness of breath during exercise, chest pain, non-productive cough lasting for three weeks with worsened cough outbursts, general weakness, fever at the time of admission. Laboratory findings showed non-transfusion-dependent anaemia, slightly elevated inflammatory markers (CRP 39.1 mg/l and PCT 0.16 µg/l), hyperuricemia, elevated D-dimers (980 µg/L). Moreover, left shifted leukogram was observed. In molecular analysis of sputum Bordetella pertussis genetic material was detected (Ct value: 30.67). After testing, diagnosis was clear - a Whooping cough, an Indian strain of Bordetella pertussis. Therefore, patient was isolated for 15 days. Treatment of clarithromycin for 7 days was successful. In addition, the patient was diagnosed with chronic kidney disease in 2002, he underwent two renal transplantations, one of which was unsuccessful. Ultrasound examination showed chronic diffuse changes of the kidney parenchyma and kidney cysts were observed. Changes in 2021 kidney graft biopsy showed a chronic active humoral rejection reaction. During the treatment of Pertussis, deterioration of kidney function was observed: an increase of creatinine level from 247 to 370 µmol/l and eGFR (CKD-EPI) (mL/min/1.73 m^2) lowered to 15. Consequently, there can be a link between a pertussis and worsening of transplanted kidney function.

Discussion. Infections are one of the main causes of morbidity and mortality after solid organ transplantation. Adults tend to have atypical pertussis and up to 46% are asymptomatic, manifesting only by a constant cough as in the described clinical case. Macrolides are effective, eradicating B. pertussis by 97%. patients after 2-3 days and 100%. - after 14 - 21 days.

Conclusions. This case can be considered a call for transplant programs to ensure immunization among their transplant candidates and recipients.

GLP1 ANALOG USE FOR KIDNEY TRANSPLANT IN OBESE PATIENT WITH AUTOSOMAL POLYCYSTIC KIDNEY DISEASE (ADPKD)

Author: Nivedita Gopinath, 4 th year

Supervisor: M. Alicja Dębska-Ślizień (M.D., PhD, Prof.)

Medical University of Gdańsk, Poland

Keywords: Kidney transplant; Obesity; ADPKD; GLP1 analogs; Liraglutide

Introduction: Obesity is a well-known risk factor for the development of various diseases and can pose challenges in the management of patients who require kidney transplantation. This case report aims to highlight the importance of addressing obesity in patients with ADPKD undergoing kidney transplantation evaluation, and the potential role of weight loss interventions, including pharmacological therapies.

Case Description: A 40-year-old female with ADPKD was referred to the nephrology clinic in 2011 with a family history of the disease. Despite intentional weight loss efforts through diet and exercise, her eGFR declined to 15 ml/min/1.73m^2, and she was disqualified from peritoneal dialysis and kidney transplantation due to concerns about glucose load interference with her targeted body mass. In 2021, she was started on a GLP1 analog off-label, which resulted in further weight loss and improvement of her eGFR. She qualified for kidney transplantation in November 2021 and underwent a successful transplant in March 2022.

Discussion: This case highlights the challenges of managing obesity in patients with ADPKD who require kidney transplantation. Obesity can negatively impact outcomes for transplant recipients and may result in disqualification from transplantation due to increased surgical risks and reduced organ availability. However, lifestyle interventions, and pharmacological therapies like Liraglutide may be helpful in promoting weight loss and improving outcomes in obese patients with ADPKD.

Conclusions: Obesity is a significant challenge in the management of patients who require kidney transplantation. Weight loss interventions, including diet, exercise, and pharmacological therapies, may play a crucial role in improving outcomes in these patients. Obesity has an impact on kidney transplantation eligibility and interventions based on guidelines and current research should be considered during evaluation. Further research is warranted to determine the optimal management strategies for obesity in this population.

A CASE OF HEMOLYTIC UREMIC SYNDROME AFTER MITRAL VALVE ANNULOPLASTY

Author: Matas Barakauskas, 5th year

Supervisor: Artūras Vinikovas, M.D.

Vilnius University Faculty of Medicine, Vilnius, Lithuania

Keywords. mitral valve; annuloplasty; hemolytic uremic syndrome; microangiophatic hemolytic anemia.

Introduction. Hemolytic uremic syndrome (HUS) is one of the disorders belonging to thrombotic microangiopathies category. HUS causes microangiophatic hemolytic anemia (MAHA) that is a rare complication after mitral valve (MV) repair. In this abstract, we describe a case of successful treatment using prosthetic replacement of the MV after secondary HUS manifested from annuloplasty.

Case description. A 44-year-old male was consulted by cardiologist after episode of ventricular tachycardia (VT) 5 months ago. His disease history: in 2013 first episode of arrhytmia due to emotional stress and alcohol misuse, in 2017 our mentioned episode of VT, which was treated with amiodarone infusion and 3 defibrillation shocks. Patient's medical history consists of stage 2 hypertension, type 2 diabetes for 5 years, abuse of anabolic steroids for 5 years a decade ago and social smoking. During physical examination systolic murmur was heard in the MV auscultation point. Echocardiography detected images of MV prolapse and 3rd degree regurgitation. A recommendation for MV annuloplasty with coronary artery bypass and bicuspidization of tricuspid valve was given.

Discussion. After surgery as patient was admitted to intensive care unit laboratory tests were done. Increasing creatinine, urea, C-reactive protein, lactate dehydrogenase, decreasing hemoglobin, haptoglobin and thrombocytopenia were found. Suspection of HUS and normal findings in echocardiography indicated to start continous venovenous hemofiltration and do additional laboratory tests. ADAMTS-13 and CH50 were normal, SC5b-9 was elevated. Biopsy did not show anything significant. However, a repeated echocardiography on the 6th post-operative period day showed severe MV regurgitation. An interdisciplinary team's decision was an immediate operation to replace MV with a mechanical valve. Through the next few weeks renal function significantly improved along other laboratory tests – HUS was treated.

Conclusions. HUS is not typically seen complication after MV repair. Nevertheless, a precise interdisciplinary teamwork between physicians is essential. Further researches are needed to assess these conditions more effectively.

RENAL ALLOGRAFT HISTOLOGICAL INJURIES IN BIOPSIES PERFORMED BETWEEN 5 AND 10 YEARS AFTER TRANSPLANTATION

Author: Rytis Stankevičius[1], 5th year

Supervisor: Ernesta Mačionienė[2,3], M.D., Arvydas Laurinavičius[4,5], M.D., PhD, Prof., Marius Miglinas[2,3], M.D., PhD, Prof.

[1] *Faculty of Medicine, Vilnius University, Vilnius, Lithuania*

[2] *Vilnius University Hospital Santaros Klinikos, Nephrology Center, Vilnius, Lithuania*

[3] *Vilnius University, Institute of Clinical Medicine, Faculty of Medicine, Vilnius, Lithuania*

[4] *National Center of Pathology, Affiliate of Vilnius University Hospital Santaros Klinikos, Vilnius, Lithuania*

[5] *Vilnius University, Institute of Biomedical Sciences, Faculty of Medicine, Vilnius, Lithuania*

Keywords. Kidney allograft histology; immunosuppressive treatment, kidney allograft biopsies.

Background and aim of the study. Long-term renal allograft survival remains stable and lacks improvements, suggesting the need for research investigating causes and details about this problem. This study aims to analyse the amount and type of abnormalities found in renal allograft biopsies performed between 5 and 10 years after transplantation and their relations to immunosuppressive treatment received.

Methods and materials. This single-center retrospective observational study was conducted in Vilnius University Hospital Santaros Klinikos. It analysed histological findings in indication biopsies performed between years 2013 and 2022. All included biopsies were performed between 5 and 10 years after kidney transplantation. Repetitive biopsies of the same patient and biopsies not evaluated according to Banff criteria were excluded.

Results. Out of 57 biopsies, 34 met the inclusion criteria. 23 (67.65%) patients were male and 11 (32.35%) were female. The mean age of the patient at the time of biopsy was 41.18±12.35 years. The mean time since transplantation was 6.50±1.40 years. 33 (97.06%) patients took mycophenolate mofetil, 1 (2.94%) patient took azathioprine, 27 (79.41%) patients took methylprednisolone, 18 (52.94%) patients took cyclosporine, 4 patients (11.76%) took sirolimus, and 11 (32.35%) patients took tacrolimus as part of their immunosuppressive treatment. There were no biopsies without major histological lesions, 11 (32.35%) had chronic transplant nephropathy, 7 (20.59%) had humoral rejection, 4 (11.76%) had recurrent native kidney disease, 2 (5.88%) had global glomerulosclerosis, 2 (5.88%) had mixed cellular and humoral rejection, 2 (5.88%) had cellular rejection, and 6 (17.65%) had other abnormalities.

Conclusions. Out of 34 biopsies evaluated all had major histological lesions. The most common lesion was chronic transplant nephropathy. Moreover, even after more than 5 years posttransplant there were 32 percent of biopsies with active transplant rejection, so additional analysis is necessary to analyze the causes of developing rejection (patient incompliance, underimmunosuppression or other).

RISK FACTORS FOR ACUTE KIDNEY INJURY IN ADULT PATIENTS WITH SARS-COV-2 INFECTION

Authors: *Luīza Matuseviča [1], Mareks Kramēns[1], 6th year medical students*

Scientific research supervisor: Lect. Kārlis Rācenis [2,3]

[1] *Rīga Stradiņš University, Faculty of Medicine, Latvia*

[2] *Rīga Stradiņš University, Department of Internal Medicine, Latvia*

[3] *Pauls Stradiņš Clinical University Hospital, Department of Nephrology, Riga, Latvia*

Keywords. Acute kidney injury; Covid-19

Background and aim of the study. Acute kidney injury (AKI) is a significant complication of SARS-CoV-2 infection, which is associated with a higher mortality rate. The objective of this study was to determine risk factors that increase the risk of AKI development.

Methods and Materials. Data from 280 patients admitted to non-ICU department in Pauls Stradiņš Clinical University Hospital between December 27th 2020 and April 23rd 2021 were retrospectively analysed. Data on comorbidities, laboratory admission results, medical history, and applied therapy were obtained. Comparison between AKI and non-AKI groups was performed using the Chi-squared or Fisher test for categorical variables and the Mann-Whitney test for numerical variables. Binary logistic regression was used to identify risk factors.

Results. AKI developed for (32.5%) patients. Patients who developed AKI tended to be older (median (IQR)=80 (68-86), p=0.008), more frequent had a history of chronic kidney disease (n=40, 44.0%, p=0.008), chronic heart failure (n=51, 56.0%, p<0.001), thromboembolic events (n=40, 44.0%, p<0.001), cerebral infarction (n=25, 27.5%, p<0.001), inpatients diuretic use (n=47, 51.6%, p<0.001) and vasopressor use (n=8, 8,8%, p=0.032), had a more severe course of Covid-19 infection(n=44, 48.4%, p<0.001) and higher admission procalcitonin level (median (IQR)=0.2 (0.1-0.7 p<0.001) as well as higher mortality rate (n=38, 32.0%, p<0.001). The severe and critical course of SARS-CoV-2 infection was independently associated with a four times higher risk of AKI (OR=4.02, 95% CI=1.72-9.40, p=0.001).

Conclusions. Compared to other studies, in this study association between AKI development with SARS-Cov-2 infected patients and male sex, hypertension, diabetes, mechanical lung ventilation, respiratory diseases and malignancy was not estimated. However it showed, that pre-existed history of chronic kidney disease, heart failure, cerebral infraction and inpatients diuretic or vasopressor use are possible predisposing factors of AKI, but severe and critical course of SARS-CoV-2 infection are independent risk factors for the development of AKI.

UNEXPECTED FINDINGS IN PERITONEAL DIALYSIS PATIENT

Author: Žilvinas Paškevičius, 3rd year Resident doctor in Nephrology

Supervisors: Irmantė Bagdžiūnienė M.D.; Prof. Edita Žiginskienė M.D., PhD

Lithuanian University of Health Sciences, Kaunas, Lithuania

Keywords. Peritoneal dialysis; PD.

Introduction. While peritoneal dialysis (PD) has comparable outcomes with hemodialysis (HD), its utilization is limited by various obstacles.

Case description. 75-year old woman with end-stage renal disesae (ESRD), has tried all types of renal replacement therapies (RRT) throughout her life. After an unsuccessful kidney transplantation, PD was attempted for the patient, but its performance was limited by individual characteristics of the peritoneum, complications after surgery and infections. Therefore, in order to achieve the best quality of life (QoL), a complex method of RRT was chosen by combining "nonstandard" PD scheme and isolated ultrafiltration.

Discussion. Certain characteristics of peritoneum can complicate the performance of PD. In the usual case, literature would often suggest choosing another modality of PD or even transition to HD, but in this case, the focus was on reaching the best possible quality of life for the patient.

Conclusions. Multiple barriers can limit the performance of PD. Flexible solutions may be necessary to achieve the best possible QoL for the patient.

C-ANCA VASCULITIS – WHICH PATHWAY TO CHOOSE?

Author: Katrīne Vecvagare, 1st year Resident doctor in Nephrology
Supervisor: Aivars Pētersons, Prof., PhD

Pauls Stradiņš Clinical University Hospital, Riga, Latvia

Keywords. C-ANCA vasculitis; treatment; Rituximab; intravenous immunoglobulins.

Introduction. ANCA-associated vasculitidis are rare and heterogenous diseases, in which small and medium blood vessels are affected with MPO or anti-PR3 antibodies. Usually kidneys, lungs, heart and nervous system is affected, leading to various manifestations and even life-threatening events. Renal involvement is the most common clinical finding of ANCA vasculitides. The main pathogenetic changes in the kidneys reveal pauci-immune crescentic glomerulonephritis and oftentimes manifest with rapid progressive glomerulonephritis. Induction and maintenance immunosuppression are usually used to achieve remission. However, it remains challenging to monitor the disease at the time of acute infection and to choose the optimal maintenance therapy.

Case description. 39-year-old female presents to the Emergency department with complains of dyspnoea, joint pain and haemoptysis. She denies any chronic illnesses, surgeries or serious traumas. Her initial workup is remarkable for proteinuria of 2,2 g/24 hours and active urine sediment, creatinine is within the normal range, but has positive c-ANCA antibodies, anti-PR3 titer is 821.3 IU/ml and RF is 137.23 IU/ml. CT scan reveals signs of atypical pneumonia. No viral, bacterial, fungal or parasitic causes of pneumonia are identified. Treatment with Rituximab and Methylprednisolone is initiated, a kidney biopsy done, which shows 13 glomeruli, 0 are sclerotized, 2 show cellular crescents without tubular atrophy or interstitial fibrosis. IF is negative. As dyspnoea progresses, a second CT scan is done, which reveals progressive infiltrative changes typical for pulmonary haemorrhage. Therapy with Rituximab and glucocorticoids is initiated. Due to a decline in her kidney function, partial pressure of oxygen in blood, Hb level and an increase in anti-PR3 titer, a multidisciplinary physician team decides to treat her with 5 plasmapheresis, which is not done because of acute Covid-19 infection. Rituximab injection is postponed, treatment with Molnupiravir, continuing with Remdesivir is initiated. As B-lymphocyte populations are 0/mcl, kidney function is declining, anti-PR3 titer remains above 821.3 IU/ml, patient receives intravenous immunoglobulin therapy. Once she is afebrile, without hemoptysis, stable creatinine and decreasing anti-PR3 titer (821à576 IU/ml), she is subsequently discharged. Over the next 10 months she sees her neohrologist regularly - creatinine has decreased from 256 mcmol/l before receiving Rituximab (5 injections in total), Methyprednisolone and immunoglobulins (135 g in total) to 80 mcmol/l afterwards. Patient ‘s GFR is stable and the 6th Rituximab injection is planned at the end of April 2023.

Discussion. For induction immunosuppression Cyclophosphamide and/or Rituximab together with glucocorticoids are used, leaving plasmapheresis for those cases with creatinine > 500 mcmol/l, diffuse alveolar haemorrhage, hypoxemia or when haemodialysis is necessary. Infection is one of the side effects and potential causes of death in patients with ANCA vasculitis treated with immunosuppressants. In several studies alternative treatment strategy with intravenous immunoglobulins has been evaluated, proposing promising results. In the presented case treatment with Rituximab was initiated but was postponed and replaced by intravenous immunoglobulins once Covid-19 infection was tested positive. It showed promising results, as patient‘s clinical, laboratorical and radiological data improved.

Conclusions. Treatment of ANCA-associated vasculitis remains a challenge for nephrologists, because of high rates of infection and disease relapses. This case study presents the findings and management of a patient with primarily diagnosed c-ANCA positive vasculitis with renal and pulmonary involvement, acute Covid-19 infection and positive outcomes using immunosuppressive and intravenous immunoglobulin therapy.

LIFE-THRETENING BLEEDING FROM AN ANEURYSM IN THE ARCUATE ARTERY OF THE KIDNEY AS A RARE COMPLICATION OF GRANULOMATOSIS WITH POLYANGITIS

Author: Michał Geppert, 6th year

Supervisor: M.D, PhD Zbigniew Heleniak

Scientific Circle of Nephrology, Transplantology and Internal Diseases of Department of Nephrology, Transplantology and Internal Medicine

Medical University of Gdańsk

Gdańsk, Poland

Keywords. GPA; aneurysm; arcuate artery

Introduction. Granulomatosis with polyangiitis (GPA) is a systemic necrotizing inflammation of small and medium sized vessels. It most commonly affects the respiratory tract and kidneys. Bleeding from aneurysms formed during the disease is a rare complication.

Case description. On admission, patient's lab values were: creatinine 4.1 mg/dl; CRP, 211 mg/l; albumin, 15 g/l; cytoplasmic antineutrophil cytoplasmic antibody (cANCA) titer, 1:2560, antiproteinase 3 antibody, 188 RU/ml. The patient presented with significant shortness of breath. Massive pulmonary infiltrates typical of GPA were noted on a CT scan. Severe, life-threatening GPA with rapidly progressing glomerulonephritis was diagnosed. Patient was started on antimicrobial agents, methylprednisolone, pulse cyclophosphamide, plasmapheresis and hemodialysis. Due to severe flank pain CT angiography was performed and revealed a massive hematoma of the right kidney, with actively bleeding ruptured aneurysm of the arcuate artery. Successful urgent embolization was performed. During hospitalization, control CT was performed twice, showing no further bleeding. After the third pulse of cyclophosphamide, the patient's condition improved. Regression of pulmonary infiltrates was observed. The patient was discharged on a reduced dose of steroids and remained dialysis dependent. Laboratory tests at 1 month showed cANCA titers of 1:1280 and anti–proteinase 3 antibody titers of 147 RU/ml. Clinically, the patient presented with endocarditis and pneumonia, as his condition deteriorated, he died of septic shock.

Discussion. Major hemorrhage from an aneurysm can be a rare manifestation of ANCAassociated vasculitis. In a Japanese review, 21 cases of arterial aneurysms in GPA were identified. In 4 cases, renal arteries or their branches were affected. Usually, aneurysms in the course of vasculitis were incidental findings during radiologic examination or were identified after aneurysm rupture.

Conclusions. The signs suggestive of internal hemorrhage should raise the suspicion of this complication and prompt urgent diagnostic CT followed by intravascular intervention or surgery.

CO-OCCURRENCE OF GRANULOMATOSIS WITH POLYANGIITIS AND LUNG CARCINOID TUMOR

Author: Maciej Lubiejewski, 6th year

Supervisor: M.D, PhD Zbigniew Heleniak

Scientific Circle of Nephrology, Transplantology and Internal Diseases of Department of Nephrology, Transplantology and Internal Medicine

Medical University of Gdańsk

Gdańsk, Poland

Keywords. granulomatosis with polyangiitis, lung carcinoid tumor

Introduction. Granulomatosis with polyangiitis (GPA) is a rare systemic disease classified as a primary systemic vasculitis that affects multiple organs. Pulmonary carcinoid tumors are also uncommon entities. The article discusses a case of co-occurrence of those two unusual entities and underlines difficulties with diagnosis and treatment.

Case description. A 35-year old man, with no previous medical history, presented to the hospital with acute kidney injury (AKI). Immunological tests showed high titers of ANCA antibodies. Chest CT scan showed the infiltration of the inferior lobe of the left lung. Due to clinical picture of rapidly progressive glomerulonephritis (RPGN), lung lesions on imaging studies and presence of ANCA antibodies, GPA was diagnosed. Patient was started on high doses of methylprednisolone, one dose of cyclophosphamide and hemodialysis. Due to atypical character of lung lesions bronchoscopy was performed and revealed the presence of obturating endobronchial mass in the left lower lobe. The biopsy showed features of typical carcinoid tumor. High resolution chest CT (HRCT) confirmed the pathologic mass corresponding to a carcinoid tumor and showed regression of inflammatory lesion from the lower lobe of the left lung. The patient was evaluated by multidisciplinary team and qualified for sleeved lobectomy of the left lobe of the lung with lymphadenectomy. The histopathology study of lung tissue confirmed diagnosis of carcinoid and excluded metastastes. Currently, patient is treated in outpatient setting and remains dialysis-dependent.

Discussion. According to the literature, only one case with such particular coexistence was identified. Two more case reports of patients with carcinoid and giant cell arteritis can be found.

Conclusions. Making the final diagnosis of patients with co-existance of GPA and lung carcinoid tumor can be challenging. Both diagnostic and treatment process of patient with such co-occurence requires cooperation of multidisciplinary medical team, as immunosuppressants may lead to more post-operative complications such as infections or impaired wound healing.

THERAPEUTIC PLASMA EXCHANGE FOR HYPERTRIGLYCERIDEMIA: A RETROSPECTIVE STUDY

Authors: Kaspars Kivlenieks MD[1,2]

Supervisor: Jūlija Voicehovska MD PhD[1,3,4]

Co-authors: Santa Starostniece,[1,3] Anda Grigāne,[1,3] Eva Bormane[1,3], Dace Trumpika[1,3,4]

[1]Nephrology and Renal Replacement clinics, Riga East university hospital, Latvia

[2]Latvian university, Residency in nephrology

[3] Latvian Kidney and Multiorgan Replacement Therapy Association

[4] Riga Stradins university, Latvia

Keywords. Hypertrigliceridemia, plasma exchange, severe acute pancreatitis.

Background and aim of the study. Hypertriglyceridemia is a condition characterized by high level of triglycerides [1]. Individuals with severe hypertriglyceridemia (SHTG) have triglyceride levels more than three times than normal level. SHTG might result in significant consequences, including cardiovascular disease (CVD) and acute pancreatitis [2]. Therapeutic plasma exchange (TPE) seems to be a treatment option to reduce plasma triglycerides and possibly to decrease CVD morbidity and mortality. However, clinical data regarding its effectiveness are limited. Besides, a risk of severe pancreatitis increases progressively in the case of TG levels over 500 mg/dL (5.6 mmol/L). In turn, low-density lipoprotein cholesterol LDL-C levels may underrepresent CVD risk in patients with hypertriglyceridemia. Patients with severe acute pancreatitis (SAP) have an average hospital stay of two months, followed by a lengthy recovery period. Given the association of SHTG with SAP and atherosclerotic CVD, the goal of management of patients with hypertriglyceridemia is to reduce the risk for both conditions. The aim of the presented study was to evaluate treatment effects of TPE in SAP patients with SHTG.

Material and methods. During a 16-month period we retrospectively studied the clinical data and outcomes of 21 episodes of hypertriglyceridemia in SAP patients, when TPE procedures were applied to reduce plasma triglycerides. The TPE procedures were being initiated in average in 12 hours from the time of clinical manifestation. Technically, 40 mL/kg of plasma (1.5 plasma volumes) were removed at each procedure and replaced with 500ml 5% human albumin and 1000ml Geloplasma.

Results. Typically, 3-5 TPE procedures were being applied in every patient's case. The mean plasma triglycerides values decreased from 61.3mmol/l (12 patients, 9 of them had chylous serum) to 4.70 mmol/l with a reduction of 13 times 1300.4 %. All 21 patients survived; an average hospital stay accounted 8.3 days. There were no complications related to TPE.

Conclusions. TPE procedure is an effective method for reducing plasma triglycerides, it favorizes clinical improvement in case of SAP, helps to decrease the length of hospital stay.

''BLOCKED KIDNEY'' - ACUTE KIDNEY INJURY IN PATIENT WITH SEVERE DEHYDRATION AND NEPHROTOXIC AGENT EXPOSURE

Author: Ričards Lukjančiks, 2nd year Resident doctor in Nephrology

Supervisor: Prof. Aivars Pētersons, M.D. Kārlis Rācenis

Pauls Stradiņš clinical university hospital, Riga, Latvia

Keywords. AKI, uncontrasted kidney, renal ischemia, hypoperfusion

Introduction. Acute kidney injury most often is based on renal tissue hypoperfusion, ischemia and may be associated with nephrotoxic agent exposure causing acute renal function decreasing, hypofiltration and impaired renal tissue vascularization.

Case description. Male, 52-years-old, was hospitalized on 31.12.2022 complaining of severe fatigue, diarrhoea and vomiting due to 3 to 4 day long excessive alcohol consumption. His past medical history revealed DM type 1, chronic alcoholism, chronic pancreatitis with calciphylaxis and exocrine insufficiency. Besides that, the patient admitted that because of irregular meals for the last couple of days, he had not been getting his regular insulin injections. Laboratory tests showed hyperglycaemia (>27 mmol/l) without an evidence of metabolic acidosis, acute kidney injury (CRT >500 μmol/l, urea >35 mmol/l), CRP > 100 mg/l and increased body temperature of >38,0C. Since decreased urine output was noted, a Foley catheter was inserted and approximately 300 ml of concentrated urine excreted. Radiologic evaluation: lung CT à left side pneumonia (segments S3 and S6) and non-specific changes due to smoking. Abdomen CT à chronic pancreatitis with calciphylaxis. Adequate antibacterial, insulin and rehydration therapy were initiated. On 03.01.2023 patient pulled the Foley catheter out and macrohematuria was noted. Contrast enhanced CT urography was performed to evaluate severity of urinary tract damage. But the CT revealed that the contrast dye nearly passes through the kidneys. 30 minutes after the intravenous injection of the contrast agent, it had not reached the urinary tract. No urostasis was noted, ureters were not dilated, and blood vessel malformations were excluded. No decline in renal function was noticed afterwards and 10 days later, receiving appropriate therapy, patient was recharged of the hospital without any complaints and complications.

*(After case description there will be a presentation of two scientific articles regarding contrast retention in renal tissues during AKI and renal tissue tolerance against ischemia).

Discussion. The coincidence of a contrast-enhanced CT scan due to urinary tract hemorrhage and AKI played a key role in this case. Histopathological findings in the damaged kidney could show the presence of edema, vasoconstriction, and tubular damage. Optimal management is mandatory in these kinds of cases of acute kidney injury, including optimal hydration and elimination of nephrotoxins. Severe renal ischemia and hypoperfusion may occur in cases of acute kidney injury, but preserved kidney function after renal ischemia is possible with appropriate management. Therefore, it is essential to promptly diagnose and treat acute kidney injury to minimize the risk of irreversible damage to the kidneys.

Conclusions. According to literature data AKI often is based on combination of factors (dehydration, hypoperfusion, nephrotoxic effect), publication data suggest the possibility of renal parenchymal hypoperfusion and contrast agent retention due to AKI. Besides, severe ischemia could be present in kidneys with potentially preserved renal function, additionally there are research data about relative renal tissue's high tolerance to ischemia. In the presented case severe dehydration and possible nephrotoxic agent exposure is present that resulted in severe hypoperfusion and ischemia (contrast enhanced CT scan data) with further renal function regeneration.

E-POSTERS SECTION ABSTRACTS

BLADDER RUPTURE PRESENTING AS ACUTE KIDNEY INJURY IN A PATIENT WITH HISTORY OF RADIOTHERAPY

Author: Rytis Stankevičius[1], 5th year

Supervisors: Alvita Vickienė[2,3], M.D., prof. Marius Miglinas, M.D., PhD[2,3]

[1] *Faculty of Medicine, Vilnius University, Vilnius, Lithuania*

[2] *Vilnius University Hospital Santaros Klinikos, Nephrology Center, Vilnius, Lithuania*

[3] *Vilnius University, Institute of Clinical Medicine, Faculty of Medicine, Vilnius, Lithuania*

Keywords. Acute kidney injury; urinary ascites; bladder rupture; radiation cystitis.

Introduction. Abrupt fall in glomerular filtration rate and elevated serum creatinine suggests acute kidney injury (AKI), however serum creatinine might increase due to other reasons than kidney injury. This case describes pseudo-AKI due to reverse peritoneal dialysis as a consequence of bladder rupture.

Case description. A 52-year-old female with history of uterine body and cervical cancers treated by radiotherapy was referred for hemodialysis to a nephrology department due to uremia, hyperkalemia and elevated CRP. Ultrasound showed bilateral hydronephrosis due to bladder tamponade caused by late radiation cystitis. Hemostatic transurethral resection was performed resulting in patient's improvement and hemodialysis was discontinued. However, after urinary catheter removal, anuria reoccurred, which was considered as an AKI caused by infection or contrast induced nephropathy, as no urostasis was confirmed. Patient was treated with hemodialysis and several broad-spectrum antibiotics without improvement. Abdominal volume started increasing and carcinomatosis was suspected as a possible cause for ascites. Only after elevated creatinine was found in ascitic fluid bladder defect was suspected, and later confirmed using CT cystography. Bladder defect could not be repaired, bilateral ureterocutaneostomas were formed. After ensuring urinary outflow creatinine rapidly decreased to normal levels.

Discussion. Pseudo-AKI is a rare condition, that is hard to diagnose without suspecting it. This case demonstrates that bladder rupture should be considered after any manipulations in pelvic area, especially in patients with a history of radiotherapy. In this case, elevated serum creatinine and ascites in patient with history of oncology suggested AKI and possible malignancy, which could not be excluded even with imaging. Increased creatinine in ascitic fluid was the main hint of urinary tract rupture.

Conclusions. Pseudo-AKI caused by urinary tract rupture is a rare condition, however it should be considered in patients presenting with elevated creatinine and ascites and having history of medical manipulations in pelvic area.

THE UNPREDICTABLE FACES OF SARCOIDOSIS

Authors: Eglė Narkevičiūtė 4th year, Kamilė Čeponytė 4th year

Supervisor: Rita Rugienė, MD, PhD, Assoc. Prof.

Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Rheumatology, Orthopaedic Traumatology and Reconstructive Surgery,

Vilnius, Lithuania

Keywords. Sarcoidosis; vasculitis; hemorrhagic rash; lymphadenopathy; interstitial nephritis; multisystem granulomatous disease.

Introduction. Sarcoidosis is an unknown etiology, hardly detectable, multisystem granulomatous disease, owing to its various faces on individual patients.

Case description. A 38-year-old man complained of pruritus with a full-body hemorrhagic rash. No fever or other symptoms were present at the time of admission. Rash, anemia, lymphopenia, elevated inflammatory markers (CRP 35.5 mg/l and PCT 0.24 μg/l, blood creatinine 327 μmol/l) and protein in the urine sample suggested vasculitis. Splenomegaly and lymphadenopathy, diffuse changes in kidney parenchyma were visible in abdominal sonoscopy. CT scan confirmed ultrasound findings, furthermore, slight fibrotic changes detected on both sides of the lungs apex, as well as diffuse interlobular septal thickening. The absence of ANCA and ANA, histological presence of left kidney interstitial granulomatous inflammation without necrosis, made the diagnosis of vasculitis questionable. Chest X-ray showed signs of interstitial lung tissue damage without infiltration. Multiple nodules were found in the mucosa of the tracheobronchial endoscopy, biopsy confirmed granulomatous bronchitis. Clinical findings were in favour for the diagnosis of systemic sarcoidosis, therefore tuberculosis was ruled out. Reactive changes in the bone marrow biopsy and leukocytoclastic vasculitis in the skin biopsy identified as sarcoidosis manifestations.

Discussion. In this case, sarcoidosis exceptionally starts not with a Lofgren's syndrome, but with a typical picture of systemic vasculitis. After prednisolone therapy, positive dynamics in patients' general condition and his laboratory tests were observed. Selected approach to the given treatment is largely empiric and includes corticosteroids, due to leukocytoclastic vasculitis and secondary interstitial nephritis rare occurrence in sarcoidosis. In some cases immunosuppressive agents such as methotrexate, azathioprine, leflunomide and hydroxychloroquine might be used as an add-on to prevent end stage renal disease.

Conclusions. In order to minimise morbidity and mortality, physicians should aim for early sarcoidosis identification and treatment. As sarcoidosis can have various masks of rheumatic disease, differential diagnosis of a vasculitis should include sarcoidosis.

THE UTILITY OF DIGITAL EPIDEMIOLOGY IN PREDICTING COVID-19 OUTBREAKS AND SYMPTOMATOLOGY CHANGES

Author: Jakub Radziwon, 6th year & Maciej Lubiejewski, 6th year

Supervisor: Zbigniew Heleniak, M.D., PhD

Student Scientific Group of Nephrology

Department of Nephrology, Transplantology and Internal Diseases

Medical University of Gdańsk

Gdańsk, Poland

Keywords. COVID-19; Infodemiology; Epidemiology; Infectious Diseases; Internal Medicine

Background and aim of the study. Internet search engines such as Google Trends™ are becoming widely used for public health purposes like monitoring engagement on medical issues or forecasting disease occurrence. At the beginning of the Coronavirus Disease 2019 (COVID-19) pandemic authors reported the possibility of outbreak prediction using internet analysis in several countries. The goal was to determine if utilizing internet search analysis, COVID-19 cases might still be predicted in pandemic stages later on.

Methods and materials. During the two years of the pandemic, Google Trends™ was utilized to track online searches in Poland for COVID-19 symptoms and pandemic-related subjects. Search volumes were then assessed for correlation with daily cases in each wave of infection.

Results. The symptoms that correlated strongly with new cases were anosmia and ageusia ($r = 0.5230$ and $r = 0.4483$, respectively, $p < 0.01$). Searches for these symptoms preceded an outbreak by 12 days during the first wave of infections, but this gap was later shortened. Searching for these symptoms diminished during the last phase and stronger correlations were shown for fever, sore throat, and headache. Other symptoms were also searched and showed various associations with the pattern of infections.

Conclusions. COVID-19 case prediction using Google Trends™ was accurate at the beginning of the pandemic but did not remain accurate later on. However, observing symptom changes and virus evolution might be a promising application of internet search analysis in the future.

HEMOLYTIC UREMIC SYNDROME IN A PATIENT WITH ACUTE PANCREATITIS

Author: Ragda Karim, Saif-Eddin Dabour, Rami Al-Sudani, 6th year

Supervisor: Łukasz Zdrojewski**,** M.D., PhD

Medical University of Gdansk, Gdansk, Poland

Keywords. Hemolytic Uremic Syndrome, Pancreatitis, Acute Kidney injury.

Introduction. Thrombotic microangiopathy (TMA) encompasses two distinct forms: thrombotic thrombocytopenia purpura (TTP) and hemolytic uremic syndrome (HUS). HUS is a rare disease presenting with microangiopathic hemolytic anemia, thrombocytopenia and acute kidney injury. The latter is further classified into atypical hemolytic uremic syndrome (aHUS), associated with overactivation of complement system, and typical HUS, associated with intima injury driven by enterotoxic bacterias. aHUS can be triggered by infections and autoimmune conditions, while acute pancreatitis (AP) is not commonly known trigger.

Case description. a 26-year-old male was admitted to the department due to pancreatitis and acute kidney injury (AKI). The patient reported diarrhea, vomiting, stabbing upper epigastric pain, dyspnea, and anuria during the last four days. Due to AKI with anuria, patient required hemodialysis. Laboratory markers of haemolytic anemia were found with thrombocytopenia and schistocytes. Further laboratory diagnostics showed normal function of complement system, negative direct antiglobulin test (BTA) and slightly decreased ADAMTS-13 activity. No enterotoxic bacterias were found in feces. Diagnosis was made for aHUS and treatment with plasma exchange with plasmapheresis was started. The patient also received leukocyte-depleted red blood cell concentrate. The patient recovered to good general condition and was discharged for further care in outpatient clinic with normal renal function without hemolytic activity and ADAMTS-13 activity within normal values.

Discussion. Acute pancreatitis as potential etiology to HUS is extremely rare. A clinically significant issue is to understand if AP is a manifestation of aHUS or an etiology for development of aHUS. To determine the underlying pathomechanism, it is necessary to assess the activity of ADAMTS 13 and anti-ADAMTS 13 serum antibodies. Identifying genetic mutations in the complement system will probably become a standard soon.

Conclusions. aHUS can be caused by AP. In a patient with AP, hemolytic anemia and acute kidney injury, aHUS should be considered as a potential diagnosis. Identifying the TMA form aids in selecting appropriate therapies and prophylactic measures to prevent disease recurrence and complications.

A CASE OF CYTOMEGALOVIRUS-ASSOCIATED ESOPHAGITIS AND GASTRITIS AFTER CADAVERIC RENAL TRANSPLANTATION

Author: Matas Barakauskas, 5th year

Supervisor: Artūras Vinikovas, M.D.

Vilnius University Faculty of Medicine, Vilnius, Lithuania

Keywords. cytomegalovirus-associated; foscarnet; maribavir.

Introduction. Cytomegalovirus (CMV) infection is one of the most common complications in renal transplant recipients' population (RTRP). The disease typically onsets within the first 4 months after transplantation. In this abstract, we describe a case of cytomegalovirus-associated esophagitis and gastritis for cadaveric renal transplant recipient who was successfully treated with maribavir.

Case description. A 68-year-old male was hospitalised 6 months ago because of high viral load for CMV, dysphagia, pressure in chest and lower back, weight loss and fatigue. Video esophagogastroduodenoscopy and biopsy was performed. Results: CMV-associated esophagitis and gastritis. His disease history: polycystic kidney disease which progressed into end-stage renal disease, right kidney nephrectomy more than 3 years ago, approximately 3 years of hemodialysis and cadaveric renal transplantation (CMV D+/R-) almost 1 year ago. Patient's medical history includes stage 2 arterial hypertension and COVID-19 infection.

Discussion. After transplantation patient has been receiving one of the most frequently selected immunosupression maintenance substances such as glucocorticoid methylprednisolone, calcineurin inhibitor tacrolimus and antimetabolite mycophenolate mofetil. In addition antibiotic trimethoprim-sulfamethoxazole was administered for prophylaxis of *P. jirovecii* infection and antiviral medication valganciclovir for CMV infection. Regardless of given prophylaxis and switch to ganciclovir the CMV DNA copies/ml increased from 5882 to 721280 in 3 weeks during the 5th month after transplantation. A decision to initiate treatment with foscarnet was decided. However, along the decreasing viral load electrolyte imbalance and allograft function deterioration occurred. Foscarnet was gradually discontinued. By partial sequencing of the viral UL97 gene the resistance associated mutation C303W was detected, which decreases the activity of ganciclovir. The 8-week course of maribavir was introduced. There were no CMV copies found during follow-up check.

Conclusions. CMV infection is a common problem for RTRP able to cause life-threatening systemic involvement (pulmonary, gastrointestinal or hematologic). Nevertheless, single virus genome sequencing can detect resistance associated mutations and adjust the treatment.

ACUTE KIDNEY INJURY DUE TO OXALOSIS: A CLINICAL CASE

Author: Erika Ališauskienė, 6th year[1]

Supervisor: Laurynas Rimševičius, M.D., PhD, Assoc. Prof.[2]

[1]Vilnius University Faculty of Medicine, [2]Institute of Clinical Medicine, Clinic of Gastroenterology, Nephrology and Surgery, Vilnius University Santaros Clinics

Vilnius, Lithuania

Keywords. Acute kidney injury; renal oxalosis; vitamin C; hypervitaminosis; dinitrophenol.

Introduction. Acute kidney injury can develop for various reasons, one of which is the rarely detected renal oxalosis. This clinical case illustrates the importance of a thorough history in determing oxalosis as one of the potencial diagnosis.

Case description. In February 2023, a 35-year-old male patient was admitted to the ER for suspected acute kidney injury. On arrival the patient complained of nausea, weakness and urinary dysfunction. Few months ago, he sustained an injury to his left knee joint, underwent a surgery under spinal anaesthesia and was discharged home in good condition. He had no history of kidney disease and denied comorbidities. According to the patient, the symptoms started after returning home and progressed for 4 days. On examination, the condition was moderate, with a 4-point pain in the epigastrium. Pacients was hospitalised in the NICU. Urogenital ultrasound showed bilateral accentuated pyramids. Blood tests showed metabolic acidosis, moderate hyperkalaemia, hyponatraemia, elevated creatinine, uric acid, LDH and liver enzymes. General urine test: haematuria, slight ketonuria. The patient was prescribed haemodialysis via CVK. Diuresis started to increase during treatment. Creatinine remained elevated. A renal biopsy was performed and the diagnosis of renal oxalosis was confirmed. The patient's medical history was reviewed. It was found that the patient was a heavy exerciser, consumed a high protein diet and supplements, and had taken a 200 mg tablet of 2,4-dinitrophenol a few days before the knee surgery. All these factors could be the cause of renal oxalosis.

Discussion. Renal oxalosis should be suspected in the presence of sudden unexplained renal impairment and exclusion of other causes of tubulointerstitial disease. Causes of oxalosis could be excessive dietary intake of oxalate, increased intestinal absorption, or high doses of vitamin C.

Conclusions. In previously healthy patients, it is particularly important to take a detailed history to properly assess the risks of various causes of acute kidney injury. Otherwise, the diagnosis may be delayed.

3D LAPAROSCOPIC PYELOPLASTY WITH BUCCAL MUCOSAL GRAFT FOR THE MANAGEMENT OF RECURRENT ADULT PROXIMAL URETERAL STRICTURE

Author: Eglė Narkevičiūtė 4th year

Supervisor: Albertas Čekauskas, MD, PhD

Advisors: Aivaras Grybas, MD and Ramūnas Tyla, MD

Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Gastroenterology, Nephro-Urology and Surgery

Vilnius, Lithuania

Keywords. Pyeloplasty; laparoscopic; recurrent proximal ureteral stricture; buccal mucosal graft; reconstructive surgery; minimally invasive surgery.

Introduction. Ureteral stricture is a narrowing of the ureter, which, if left untreated, might lead to urinary tract infections, kidney stones and loss of the kidney function.

Case description. A 27-year-old female patient presented with episodic pain in the right upper quadrant, lasting for 2-3 years. CT scan confirmed hydronephrosis of the right kidney, but dynamic renal scintigraphy showed only mild outflow obstruction and overall renal function was good. The patient was monitored for right ureteropelvic junction (UPJ) stricture and as renal pelvis dilatation increases, right ureteral stent was placed. A few months later right laparoscopic antevasal pyeloplasty was performed. The patient was asymptomatic with no hydronephrosis for 6 months. However, a stricture of the right UPJ with obstruction recurred, therefore, a 3D right laparoscopic ureterolysis, pyelolithotomy, renal pelvis and UPJ stricture revision surgery were performed. After 2 months, no recurrence of obstruction was detected. Differential function of the right kidney increased from 38% to 41% in Lasix renogram. 6 months after the surgery, the patient complained of pain and nausea. Sonography confirmed hydronephrosis and patient was hospitalized for ureteral stent placement. Subsequently, due to the recurrent proximal ureteral and UPJ strictures, right laparoscopic 3D pyeloplasty with a buccal mucosal graft was successfully performed. After 3-months follow-up, the patient had no complaints, but hydronephrosis of the right kidney was visible.

Discussion. Management of recurrent ureteral strictures aims to avoid the long-term use of stents. If endoscopic treatment is ineffective, open, robotic or laparoscopic ureteral reconstructive surgery approach is selected according to the localization of the stricture. The peculiarity of laparoscopic surgery is that most patients are young and recurrent stricture operations are rarely performed laparoscopically with the buccal mucosa. Only 5 case reports of similar surgeries were found in PubMed.

Conclusions. Buccal mucosal graft pyeloplasty is still a relatively rare procedure, but one of the effective minimally invasive surgeries, especially for complex recurrent proximal ureteral strictures.

HYPERTENSION AFTER KIDNEY TRANSPLANTATION

Author: Radoslavas Stasilo, 5th year.

Supervisor: Artūras Vinikovas, M.D., L. Rimševičius, M.D., PhD, Assoc. Prof.

Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Gastroenterology, Nephrology and Surgery, Vilnius University Santaros Clinics

Vilnius, Lithuania

Keywords: renal transplantation; resistant hypertension; chronic kidney disease;

Background and aim of the study: To analyse which antihypertensive drugs and diuretics patients use after transplantation and find out which of them are the most commonly used. This study investigates the relationship between resistant hypertension and patient gender, prevalence of glucocorticoid use, incidence of stages 4-5 chronic kidney disease, type 1 and type 2 diabetes.

Methods and materials: We included 110 patients, ambulatory followed by nephrologists in VUL SK outpatient department. Resistant hypertension was defined as failure to achieve blood pressure (BP) levels below 140/90 mm/Hg despite treatment with three antihypertensive medications with complementary mechanisms of action (with at least one diuretic) or patients with four or more antihypertensive medications, even when BP was controlled. To determine statistical significance Fisher's exact test and chi-squared test have been used. $P<0,005$ was considered to indicate a statistically significant difference.

Results: The average age of the patients was 50.26 ± 12.87 years. 59 (53.64%) men and 51 (46.36%) women. Angiotensin-converting enzyme (ACE) inhibitors were used 29 (26.36%), angiotensin receptor blockers (ARBs) 35 (31.82%), alpha-blockers 36 (32.73%), furosemide 7 (6.36%) patients. The most commonly prescribed antihypertensive drugs were beta-blockers and calcium channel blockers, they were used by 71 (64.55%) and 62 (56.36%) patients, respectively. The most commonly prescribed diuretic was Spironaloctone, 8 (7.27%) patients used it. The mean amount of prescribed antihypertensive drugs with diuretics was 2.309 ± 1.155. Resistant hypertension was detected in 21 patients (19.09%), including 11 men and 10 women. We found statistically significant relationship between resistant hypertension and stages 4-5 chronic kidney disease ($p=0.0002823$).

Conclusions: Beta-blockers and calcium channel blockers were generally used in the treatment of arterial hypertension after kidney transplantation. Spironolactone was the most commonly used diuretic. Patients used ARB more often than ACEI inhibitors. Our analysis showed, that number of patients with treatment-resistant arterial hypertension depends on the incidence of stages 4-5 chronic kidney disease.