Abstract book

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ABSTRACT NUMBER 1

Gluten enteropathy presenting as kidney stones

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A 70 year old patient was referred for metabolic work up after a second renal colic. His previous history included a first renal colic at the age of 23 and a fast bowel transit of 30 minutes from stomach to colon at the age of 63.

The patient now presented with a second renal colic at the age of 70. A CT scan showed hydronephrosis due to a 5 mm stone in the left ureter as well as numerous stones in both kidneys. The stone was retrieved through ureteroscopy. Stone analysis with infrared spectroscopy revealed 25% calciumoxalate dihydrate and 75% calciumoxalate monohydrate. Blood analysis showed normal calcium, PTH and bicarbonate values. Urine analysis in two 24 hour collections was as follows:

URINE ANALYSIS	**First collection**	**Second collection**
Diuresis ml/24h	2650	2600
PH		5,7
Creatinuria mg/24h	1328	1318
Natriuria mmol/24h	110	153
Calciuria mmol/24h	3.1	3.8
Citraturia mg/24h	<26	<26
Oxaluria mg/24h	45	54

The low citraturia and the high oxaluria was suggestive of a malabsorption syndrome. A gastroscopy with duodenal biopsies was performed. Pathological examination of the biopsies showed partial villous atrophy with on immunohistochemistry CD3-stain showing marked increase of intra-epithelial lymfocytes. The diagnosis of gluten enteropathy type 3B was made.

CONCLUSION: Gluten enteropathy can present as calciumoxalate stone with low citrate and high oxalic acid in the urine.

ABSTRACT NUMBER 2

Stone analysis and risk factors in 247 patients with kidney stones

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OBJECTIVE: to determine the risk factors in stone formation and the type of stones in 247 patients referred to the stone clinic in a community hospital.

METHODS: From September 2013 till May 2017, all patients referred to the stone clinic in a community hospital in Antwerp were analyzed for their risk factors in stone formation and for the type of stone they presented with. In total 247 patients were analyzed during this period. Only patients with 2 or more stones during 1 or more episodes of renal colic were referred as well as all patients younger than 30 years of age.

RESULTS: Stone analysis was done with infrared spectroscopy. In some patients, no stone could be retrieved, but crystals could be found in the microscopic examination of the urine. In those cases, the crystals were considered to be indicative for the type of stone and counted as such. The patients had a median age of 48 years (range 17-81), there were 176 males and 71 females. 141/247 patients presented with predominantly calcium-oxalate stones, 16/247 had predominantly calcium-phosphate stones, 2/247 had Calcium-phosphate and calcium-oxalate in equal concentration, 14/247 had uric acid stones, 4/247 had a combination of uric acid and calcium-oxalate, 5/247 had cystine stones, 1/247 had struvite stones, 1/247 had a stone consisting of atazanavir and 1/247 had a stone consisting of proteins. In 62/247 patients, no stone or crystals could be analyzed.
The main risk factors were low urine output defined as at least 1 urine collection below 2 liter over 24 hours (175/247), hypercalciuria (77/247), hyperoxaluria (51/247), hypocitraturia (46/247) and hypercystinuria (5/247). Of the patients with hypercalciuria, 8/247 had a primary hyperparathyroidism. There were also 6/247 patients with a secondary renal tubular acidosis, 5 due to topiramate and 1 due to acetazolamide.

CONCLUSION: We confirm that calcium-oxalate is the predominant type of stone in our patients. Low urine output, hypercalciuria, hyperoxaluria and hypocitraturia were common risk factors. 3.2% of patients had a primary hyperparathyroidism and 2.4% had a renal tubular acidosis mainly due to topiramate use.

ABSTRACT NUMBER 3

Ischemia in Kidney Transplantation Causes DNA Hypermethylation and Predicts Chronic Allograft Injury

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OBJECTIVE: Ischemia during kidney transplantation is a major cause of chronic allograft injury and adversely impacts outcome. We investigated whether DNA methylation underlies ischaemia-induced chronic allograft injury.

METHODS: We profiled DNA methylation across >450,000 genome-wide CpG sites using 3 cohorts of brain-dead donor kidney allograft biopsies: a longitudinal cohort with paired biopsies at procurement (n=13), after implantation and reperfusion (n=13), and at 3 or 12 months after transplantation (n=5 for both); a cohort with pre-implantation biopsies after cold ischaemia (n=82); and a cohort with post-reperfusion biopsies (n=46). Chronic allograft injury was defined by a Chronic Allograft Damage Index (CADI) score >2 at 1 year after transplantation.

RESULTS: DNA methylation levels of kidney allografts increased after ischemia in the longitudinal cohort ($p<0.001$). These changes were not transient, as DNA methylation was still increased up to 1 year after transplantation. In the pre-implantation cohort, longer cold ischemia time directly correlated with the extent of DNA hypermethylation ($p<0.001$). Hypermethylation preferentially affected genes involved in suppression of kidney injury and fibrosis. Based on the 66 CpG islands hypermethylated by ischemia in both cohorts at FDR<0.05, a methylation risk score was developed, which in pre-implantation kidney biopsies predicted chronic injury at 1 year after transplantation (AUC 0.92). Independent validation in post-reperfusion biopsies confirmed that the methylation risk score predicted chronic injury, while outperforming baseline clinical variables (AUC 0.78 *versus* 0.69), and also correlated with reduced allograft function at 1 year after transplantation in both cohorts ($p=0.03$; $p=0.009$).

CONCLUSION: Our results indicate a novel, epigenetic mechanism underlying ischemia-induced chronic injury in kidney transplantation.

ABSTRACT NUMBER 4

The Epigenome of Renal Aging and Age-Related Glomerulosclerosis and Interstitial Fibrosis

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OBJECTIVE: Upon aging, kidney function inevitably decreases, and renal tubular atrophy, interstitial fibrosis, glomerulosclerosis and arteriosclerosis develop. Despite several studies demonstrating DNA methylation changes as hallmark of aging, it remains elusive which genes are specifically affected in the kidney and whether this has a morphological role.

METHODS: We profiled DNA methylation across > 800,000 genome-wide CpG sites in 95 renal biopsies obtained pre-implantation during kidney transplantation. Donor age ranged from 16 to 79 years. We evaluated the effect of age on DNA methylation locus-specifically, grouped the significant sites into regions, and correlated the age-associated sites to the four histopathologic hallmarks of age at the time of transplant, as well as at one year after transplantation.

RESULTS: Donor age associated significantly with methylation levels at 92,778 CpGs (FDR<0.05). These sites corresponded to 10,285 differentially methylated regions, of which the Wnt/beta-catenin signaling pathway was the top enriched pathway among the affected genes. Interestingly, methylation at the age-associated CpG sites mainly associated with glomerulosclerosis, and to a lesser extent also with interstitial fibrosis, whereas far less associated with tubular atrophy and arteriosclerosis. Moreover, the association was less important at baseline (time of transplant), but very pronounced when methylation at the time of transplant was correlated with the histology of future protocol biopsies, performed at one year after transplant.

CONCLUSION: In this epigenome-wide association study, we demonstrate that epigenetic renal aging is implicated in progressive fibrosis, both in the glomerulus as well as in the interstitium.

ABSTRACT NUMBER 5

The Duration of Asystolic Ischemia Time Determines the Risk of Graft Failure After Circulatory-Dead Donor Kidney Transplantation: a Eurotransplant Cohort Study.

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OBJECTIVE: Kidneys donated after circulatory death (DCD) are increasingly used for transplantation. Consensus reports recommend limiting donor warm ischemia time in DCD donation, although an independent effect on graft outcome has not been demonstrated.

METHODS: We investigated death-censored graft survival in 18,065 adult recipients of single deceased-donor kidney transplants in the Eurotransplant region: 1,059 DCD and 17,006 brain-dead donor (DBD) kidney recipients. Donor warm ischemia time in DCD kidneys was defined as time from circulatory arrest until cold flush. Graft survival was analyzed by cox regression, both unadjusted as well as adjusted for donor, preservation, and recipient variables.

RESULTS: Graft survival was worse in recipients of DCD kidneys compared to recipients of DBD kidneys (adjusted HR 1.28, 95%CI 1.10-1.46), due to an increased risk of primary non-function (62/1,059 versus 560/17,006; P<0.0001). With donor warm ischemia time in the model, DCD was no longer a risk factor, demonstrating that donor warm ischemia time determines the difference in transplant outcome of DCD donation. Indeed, DCD transplants with short (<17 minutes) donor warm ischemia times have comparable graft survival to standard-criteria DBD transplants. Donor warm ischemia time also associated with graft failure in DCDs (adjusted HR 1.20 per 10-minute increase, 95% CI 1.03-1.42). At 5 years after transplantation, graft failure occurred in 14 of 133 recipients (10.5%) with donor warm ischemia time <10 minutes, 139 of 555 recipients (25.0%) with donor warm ischemia time between 10 and 19 minutes, and 117 of 371 recipients (31.5%) with donor warm ischemia time ≥20 minutes.

CONCLUSION: This study on the Eurotransplant registry demonstrates that warm ischemia time in DCD donors is associated with worse graft survival after kidney transplantation. These findings support the expert opinion-based guidelines to limit donor warm ischemia time.

ABSTRACT NUMBER 6

Bone phenotype in ADPKD patients with end stage renal disease

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BACKGROUND & OBJECTIVE: Autosomal dominant polycystic kidney disease (ADPKD) is among the most common hereditary nephropathies and arises as the consequence of mutations in one of two genes, pkd1 or pkd2. PKD1 and PKD2 proteins form a complex on the primary cilium and are thought to play a role in mechanosensation in various cells including osteocytes. Preliminary data showed increased sclerostin levels suggesting impaired mechanosensation in ADPKD patients with end stage renal disease (ESRD). A bone phenotype of reduced bone mass and turnover has been reported in mice with targeted disruption of pkd1 and normal kidney function. The aim of the present post-hoc analysis was to compare the bone phenotype between ADPKD patients with ESRD to non-ADPKD controls.

METHODS: Laboratory parameters of mineral metabolism including FGF23 (Kainos) and sclerostin (Tecomedical), bone turnover markers (all IDS iSYS) and bone mineral density (BMD, by dual energy x-ray absorptiometry, DXA) were assessed in 518 renal transplant candidates (ADPKD, n=99), with also bone biopsy data available in a subset of patients (n=71).

RESULTS: Circulating sclerostin levels were significantly higher in ADPKD patients (2.20 vs 1.84 ng/L, p=0.001). Circulating levels of bone alkaline phosphatase (17.4 vs 22.6 ng/mL, p<0.0001) and tartrate-resistant acid phosphatase 5b (4.65 vs 5.46 U/L, p=0.006) were significantly lower in ADPKD, as were histomorphometric parameters of bone formation (Ob.Pm/T.Pm p=0.04). Associations remained after adjustment for classical determinants (e.g. PTH, age, gender …) in regression analysis. Histomorphometric parameters of bone mineralization were numerically higher in ADPKD (O.Pm/B.Pm, p=0.06). DXA showed better preserved BMD in skeletal sites rich in cortical bone (Z-score radius 1/3 -0.04 vs -0.14, p<0.0001; femoral neck -0.72 vs -1.02, p=0.01).

CONCLUSION: Our data confirm a distinct bone phenotype in ADPKD patients with ESRD, characterized by high sclerostin levels, depressed bone turnover and preserved areal bone mineral density in skeletal sites rich in cortical bone.

ABSTRACT NUMBER 7

Nephrotic range proteinuria in the setting of rhabdomyolysis: do we need a kidney biopsy?

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INTRODUCTION: Normal urinary protein excretion is <150 mg/24h with the majority of excreted proteins consisting of Tamm-Horsfall protein (40%), albumin (30%;<30mg/24h), and immunoglobulins (10%). Aetiology of increased 24h protein excretion is very diverse, and can be classified according to the underlying (patho-)physiologic mechanism, namely glomerular, tubular or overflow proteinuria. *Glomerular proteinuria* is caused by a defect in glomerular filter barrier function and is characterized by high % albuminuria, and can be either nephrotic (>3.5g/24h) or sub-nephrotic-range. It can be physiological (transient, orthostatic) or pathological and may require a kidney biopsy for further diagnosis and management. *Tubular proteinuria* is due to tubule cell dysfunction resulting in failure of reabsorption of diverse filtered low-molecular-weight proteins. It is typically subnephrotic-range and is confirmed by presence of high % of alfa-1-microglobulin, ß-2-macroglobulin and retinol-binding-protein. On the other hand, tubular proteinuria may also result from structural tubular damage leading to loss of tubular proteins in urine, e.g. several brush border proteins, Tamm-Horsfall protein, lysozymuria and others, which are *not* routinely measured. Finally, *overflow proteinuria* is caused by an abnormal/increased presence of one or more filterable proteins in the blood, which then appear in the primary filtrate in supraphysiological quantities, exceeding the tubular reabsorption threshold. It is typically subnephrotic range. Literature cites three clinical settings in which overflow proteinuria occurs: multiple myeloma (Bence-Jones proteinuria), haemolysis (haemoglobinuria) and rhabdomyolysis (myoglobinuria).

CASE PRESENTATION: Here we present a case of heavy (nephrotic range) proteinuria in the setting of severe rhabdomyolysis, which illustrates that the strong proteinuria in this clinical setting is NOT limited to overflow of the 'culprit' protein (i.e. myoglobin).
A 38-year old man, no past medical history and taking no drugs, presented with high fever and shivering followed by progressive myalgia since five days prior to his admission. He also noted cola-coloured urine. His lab results showed severe rhabdomyolysis (CK-max 733.055 U/L, strongly elevated myoglobin) and mild acute kidney injury (rifle class risk, serum-creatinin 1.03mg/dl, eGFR 92 ml/min/1,73m^2). Urine analysis showed a bland sediment and progressively increasing proteinuria (2,1gr/gr creatinin on admission, max.: 5,3gr/gr (6,92 g/24 h)). His Serum albumin and cholesterol levels were always normal and he had no oedema. He was treated conservatively for the rhabdomyolysis (i.e. IV fluids, alkaline diuresis).
Our hypothesis was that this patient had developed severe overflow myoglobinuria due to intense rhabdomyolysis. Urine protein electrophoresis, however, showed a mostly tubular proteinuria pattern. Furthermore, single protein analyses of his urine demonstrated that myoglobin (marker of overflow proteinuria), albumin (marker of glomerular damage), and alpha-1-microglobulin (marker of tubular damage) comprised 2.5%, 2,9% and 6,9% of total urine protein, respectively. Additional single protein analyses for proteins typically found in the case of tubular proteinuria (ß-2-macroglobulin and retinol-binding-protein) allowed us to identify approximately 25% of total (nephrotic-range) urinary protein content. Hence the question rose whether this patient also suffered intrinsic renal (tubular) disease, in order to explain the observed nephrotic range proteinuria and if there was need for a kidney biopsy. This question however became obsolete as we observed full recovery of kidney function and complete remission of proteinuria in parallel with resolution of rhabdomyolysis over the following weeks.

CONCLUSION: According to (sparse) literature, proteinuria in the setting of rhabdomyolysis is mechanistically described as *overflow proteinuria of muscle proteins (myoglobin)*. Our work-up, however, showed that myoglobin comprised but a very small fraction (2.5%) of total proteinuria and that proteinuria consists of several other proteins, which are not measured/identified routinely. The largest identifiable fraction of urinary protein consisted of proteins, which are typically found in the setting of *tubular proteinuria*. Hence we conclude that (sub-)nephrotic range proteinuria in the setting of rhabdomyolysis (1) is but in part due to overflow of muscle proteins following muscle cell damage; (2) certainly can not be explained *solely* by myoglobinuria; (3) is in large part due to tubular proteinuria, possibly as a consequence of myoglobinuria-induced acute tubular damage ('pigment nephropathy'). Finally, (sub-)nephrotic range proteinuria in rhabdomyolysis seems to be a rather benign transient condition where there is no immediate need for a kidney biopsy.

ABSTRACT NUMBER 8

Nephrotic syndrome: a very rare presentation of (biopsy-proven) drug induced thrombotic microangiopathy (TMA)

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A 29-year old man from Thai origin was admitted for acute appendicitis (April 2017). His medical history was remarkable for (1) HIV (known since 2005, with undetectable viral load since 2009 while on Norvir, Kivexa, and Reyataz), (2) active Hepatitis C (known since 2016, with high viral load while untreated), and (3) anal cell carcinoma (known since December 2016 and treated curatively in January 2017 with 30 fractions of radiotherapy and 2 cycles of mitomycin/5-FU, after which re-biopsy and PET-CT confirmed complete cure).
Detailed history & chart review revealed that the patient had first noticed mild facial oedema during and following his chemotherapy cycles (i.e. 3 months prior to admission). His monthly oncology-follow-up labs showed normal eGFR, chronic mild anaemia and thrombocytopenia (110.000/µL) and deceasing albuminaemia. Proteinuria was never checked. During an oncology check-up shortly before his current admission nephrotic range proteinuria (6.3 g/g) was confirmed and his lab again showed hypo-albuminaemia (27g/L), normal eGFR, anaemia (HTC 22%) and thrombocytopenia (80.000/µL).
On the day of admission for acute appendicitis his eGFR had dropped to 51ml/min/1.73m^2. Appendectomy was complicated by a haemorrhagic shock (Hb = 4,2g/dL) needing surgical revision, fluid resuscitation and multiple transfusions. Despite IV fluids and transfusions, severe anaemia, thrombocytopenia, and renal failure persisted for which nephrological consult was sought and for which additional lab test were ordered.
Serology indicated prior HBV infection (not active); HIV viral load was not detectable; HCV viral load was high; sPEP (IF), K/L ratio, ANF, ANCA, RF, anti-PLA2R and cryos were all normal/negative. Lab tests revealed ongoing (Coombs negative) haemolysis as explanation for the persisting severe anaemia, absence of enzymopathies/RBC membrane defects but did show presence of schistocytes (up to 100 promille), suggesting the possibility of TMA. Hence, DD. for nephrotic syndrome & mild renal failure included one or more of the following: HCV-ass. MPGN, HIV-ass. nephropathy, drug- or chemotherapy induced GN, acute tubular necrosis due to haemorrhagic shock and/or pigment nephropathy (due to ongoing haemolysis) and/or TMA. For further work-up a kidney biopsy was performed, which showed multiple thrombi in afferent and efferent vessels and in glomeruli. There was also slight double contour formation. IF was completely negative for immunoglobulins, complement, and light chains. EM confirmed light microscopy and IF findings. Hence, biopsy findings were compatible with ONLY acute/subacute TMA.
Differential diagnosis for TMA includes (1) ADAMTS-13-def. mediated TTP, (2) Shiga-toxin mediated (typical) HUS, (3) acquired/genetic complement-mediated (atypical) aHUS (manifesting itself following several inciting conditions e.g. acute appendicitis, surgery), (4) drug (mitomycin)-induced TMA, and/or (5) TMA as a result of an underlying infection (HIV) or malignancy (anal spinocellular carcinoma) or auto-immune disorder (not apparent). TTP was rapidly excluded by urgent measurement of ADAMTS-13 activity (i.e. >65%). Next, full further biochemical, serological, microbiological and genetic work-up for TMA was initiated, before starting daily plasmapheresis (FFP-PEX) and high dose methylprednisolone (1mg/kg).
Initially very little response was seen while patient was plasmapheresed in terms of %-schistocytes, # thrombocytes, and severity of haemolysis & #PC transfusions required. After 4 weeks a slow but gradual decline of %-schistocytes, an increase of thrombocytes and a stabilisation of anaemia was observed. At this point in time anti-HCV treatment (Epclusa) was also started.

CONCLUSION: Work-up for TMA-aetiology is still ongoing but based on chronology and clinico-pathological correlations, we hypothesize that this patient suffered from mitomycin drug-induced TMA (with or without presence of an additional complement regulatory defect), which initially presented itself atypically as nephrotic syndrome. Nephrotic syndrome as first presentation of TMA is rare, but has been reported in several other case reports. In our opinion, the TMA in this patient exacerbated following a combination of several inciting conditions (multi-hit hypothesis: acute appendicitis, surgery, shock). Possibly, persisting intrarenal presence of HIV also played a role despite low viral load in serum (HIV tests on biopsy are ongoing).

ABSTRACT NUMBER 9

PD1-Checkpoint inhibitor-induced acute interstitial nephritis (AIN)

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ABSTRACT: This report describes a case of acute renal failure due to biopsy-proven severe acute interstitial nephritis following administration of nivolumab (i.e. PDl-1 inhibitor). Renal biopsy confirmed acute lymfocytic interstitial nephritis compatible with immune checkpoint-related kidney injury. Nivolumab was interrupted and corticosteroïds were initiated, with a quick recovery of renal function. Severe acute interstitial nephritis following immune checkpoint inhibitor (ICI) therapy is seen far more frequently than initially was assumed. If identified early, recovery of kidney function might be seen.

CASE PRESENTATION: A 66-year old man was admitted because of an acute decline in renal function (MDRD-GFR > 60 ml/min/1.72m2 to 14.9 ml/min/1.72 m2) . The patient had recently been diagnosed with stage 4 adenocarcinoma of the lung with solitary metastasis in Gerota's fascia. Following disease progression under successive regimens with Cisplatin/Gemcitabin, Cisplatin/Alimta and local radiotherapy, nivolumab (PDL-1 inhibitor) had been initiated one month before presentation with acute renal failure. At the time of presentation, the patient was free of any symptoms except for pain in the right lumbar region. Besides a slight costovertebral tenderness on the right side on physical examination, there were no clinical abnormalities found. Except for the use of proton-pump inhibitors, there had been no recent use of other drugs, including NSAIDs. Blood results showed a normocytic anemia (8.5 g/dL) and an elevated sedimentation rate (39 mm/h). Workup for auto-immune disease was negative. Analysis of the urine showed presence of pyuria (167 leucocytes) and a subnephrotic proteinuria (1455 mg/g creat), in the absence of hematuria. Further workup based on CT showed right-sided hydronephrosis as a result of local pressure on the ureter by increasing retroperitoneal adenopathy. PD-1-immune-checkpoint related acute interstitial nephritis was suspected on top of unilateral post-renal cause. Steroid therapy (40 mg methylprednisolone) was therefore initiated blindly, with an immediate beneficial effect on renal function (MDRD-GFR 48,8 ml/min/1.72 m2). Further recovery was noted after placement of a double-j stent in the context of hydronephrosis (GFR 50,2 ml/min/1.72 m2). Corticosteroids where then tapered over the following four weeks resulting in stable eGFR. Shortly after rechallenge with nivolumab, a severe decline in kidney function again became apparent (eGFR 23.6 ml/min/m2) and a renal biopsy was performed, which confirmed severe acute lymfocytic interstitial nephritis compatible with immune checkpoint-related kidney injury. Corticosteroids were reinitiated and nivolumab was permanently interrupted. A complete recovery of renal function was noted quickly afterwards.

CONCLUSION: Acute kidney injury caused by severe acute interstitial nephritis following immune checkpoint inhibitor (ICI) therapy has been described as one of many hyperinflammatory ICI side effects. ICI-AIN has an incidence estimated as high as 13-29% (1). Any increase in serum creatinine in patients on ICI should raise the suspicion of immune-checkpoint related kidney injury. If AIN is confirmed on a kidney biopsy, immunotherapy should be withheld and methylprednisolone should be initiated, as most cases are responsive to steroids. If identified early, a recovery of kidney function is often seen. (1)

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ABSTRACT NUMBER 10

Development of PR3-positive ANCA vasculitis under treatment with Eculizumab for Atypical Hemolytic Uremic Syndrome: a case report

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BACKGROUND: Thrombotic microangiopathies have been reported to coexist with other glomerulopathies, which can complicate differential diagnosis and the choice of adequate treatment regimens. We present the clinical case of a patient diagnosed with atypical hemolytic uremic syndrome (aHUS) who 1.5 years after diagnosis developed ANCA vasculitis while receiving maintenance therapy with eculizumab.

CASE REPORT: A 55 year old male patient was admitted in July 2014 for altered general status following a respiratory tract infection. He had severe arterial hypertension (BP 220/110 mmHg), hemolytic anemia (hemoglobin 7.3 g/dL, schistocytes 27/1000 RBC, low haptoglobine), thrombocytopenia (platelets 18.000/µL), renal failure (serum creatinine 6.3 mg/dL), macroscopic hematuria, low C3 and C4 levels and a positive Coombs test. The diagnostic workup was compatible with aHUS and treatment initiated with plasmapheresis, replaced with Eculizumab 2 months after admission. The patient developed biological and clinical remission of aHUS, recovered adequate renal function (eGFR – CKD EPI 20 mL/min/1.73 m2) and continued ambulatory maintenance therapy with eculizumab.
In December 2015, the patient was readmitted for fever, hepatosplenomegaly and altered general status. He was diagnosed with *Bartonella henselae* endocarditis and *Anaerobiospirillium succiniciproducens* bacteriemia and treated with adapted antibiotics. He developed acute on chronic kidney disease while developing increasing titers of PR3-ANCAs but without recurrence of thrombotic microangiopathy. A renal biopsy documented pauci-immune crescentic glomerulonephritis. Rituximab was administered with rapid clinical remission. Nonetheless, the patient did not recover sufficient renal function to stop dialysis therapy.

CONCLUSIONS: Our case underlines the possibility of coexistence between TMA/aHUS and other glomerulopathies. The renal biopsy has been performed despite advanced kidney failure and its' role was crucial for the diagnosis. To our best knowledge this is the first report of ANCA vasculitis developing in a patient with aHUS under maintenance therapy with eculizumab.

ABSTRACT NUMBER 11

The concept of Fragility in hemodialysis patients

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INTRODUCTION: Frailty is a concept frequently used in geriatrics. It can be defined as a biological syndrome, associated with a decrease in reserves, resistance to stressors, resulting from the decline of different physiological systems and increasing the risk of hospitalization and death. On hemodialysis, some limited data point out that this concept could also be interesting to analyze, especially in predictive terms. In Europe, the prevalence is not known and could vary according to the diagnostic criteria used.

PATIENTS AND METHODS: We studied the prevalence of fragility in a hemodialysis population of our center. Fragility is defined:
1) according to Fried's criteria if ≥ 3 points are met : malnutrition (weight loss over one year), fatigue (questionnaire), muscle weakness (grip strength measurement) , low speed of movement (measurement) and low level of physical activity (questionnaire)
2) according to the Johansen criteria based solely on the results of different questionnaires (2).

RESULTS: 108 adult patients were included, 66% of whom were men. The median age was 64 years (P25: 47.5 P75 76). The prevalence of frailty in our population is very high, ie 58% according to the definitions of Fried (1) and Johansen (2). The agreement between the two definitions is good (kappa test at 0.733 ± 0.066). Fragile patients (according to Fried) are older (69 versus 48 years, $p < 0.0001$) and more often diabetic (54 versus 24%, $p = 0.0019$).

DISCUSSION: In our European hemodialysis population, we describe a very high prevalence (more than one patient in two) of fragile subjects. In North America, the prevalence of frailty in dialysis varies between 30 and 60%.

CONCLUSION: We observed a phenotype of fragility in more than one out of two patients. It is now necessary to ensure that this phenotype is indeed an independent predictor of mortality and then conduct interventional studies to try to improve this fragility in our patients.

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ABSTRACT NUMBER 12

Brachio cephalic fistula blood flow and cardiac outcomes after Cephalic Arch Transposition for Recurrent Symptomatic Stenosis

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OBJECTIVE: Cephalic arch stenosis (CAS) is a frequent brachiocephalic (BrCe) arteriovenous fistula (AVF) complication. The aim of the study is to measure blood flow after surgery for CAS and to evaluate cardiac outcomes.

METHODS: A single center records 15 patients (median age: 65,2 years; males: 53%) who have received a transposition of the cephalic arch to axillary vein between January 2013 and January 2017. The surgeries were indicated for symptomatic patients with recurrent stenosis (13/15) (average number of balloon angioplasty: 2.5) or duplicate arch (2/15). Implantation site was the axillary vein as previously described in literature.
Between October 2016 and January 2017 blood flows were evaluated with a Transonic° device for prevalent patients (11/15).

RESULTS: The primary permeability reached 100% (15/15). None of the fistula has needed further surgery or angioplasty of the arch.
Five patients died or were out of dialysis with functioning AVF.
For the nine prevalent patients, the average blood flow was evaluated at 2.5 L/min (min 1.9 / max 3.5) and, if correlated with body surface, at 1.4 L/min/m² (min: 1.2 ; 1.7).
A revision using distal inflow procedure (RUDI) was performed on two patients because of their cardiac decompensation.

CONCLUSIONS: Cephalic Vein transposition is a well-known rescue technic for arch stenosis in dialysis patients but there is no definitive existing management strategy.
Transposition of the arch on axillar vein may obtain 100% success, but the hemodynamic consequences and the cardiac outcomes need careful observations.
Sometimes RUDI is requested to reduce overflow with cardiac decompensation.

ABSTRACT NUMBER 13

Post-transplant lymphoproliferative disease in kidney transplant recipients: a single center experience

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OBJECTIVES: Post-transplant lymphoproliferative disorder (PTLD) is the second most common malignancy encountered after kidney transplantation. The aim of this study was to determine the prevalence, presentation, characteristics, and outcome of PTLD in our cohort of kidney transplant recipients (KTR).

METHODS/MATERIALS: Retrospective study including adult patients transplanted with a kidney between 1974 and 2012 who developed PTLD. Patients with combined transplantation were excluded.

RESULTS: 2949 adults were transplanted with a kidney. 24 KTR developed PTLD (92% Caucasian; 50% male), a period prevalence of 0.81%. Age at first transplantation was 33 years (min 20-max 75). Two thirds of patients were treated with induction therapy at transplantation; 38% had a past history of treated acute rejection. Age at PTLD diagnosis was 51 years (min 33-max 75). Time from first transplantation to PTLD diagnosis was 13 years (min 0.6-max 30). Median duration of follow-up was 17 years (min 1.6-max 42). PTLD presented mainly with gastrointestinal (38%) and constitutional non-specific symptoms (21%); 79% with diffuse disease at time of diagnosis (Ann Arbor IV (75%)). Tumors were B-cell related in 92%. Histological subgroup included mainly monomorphic PTLD (n= 22) with a majority of Large Diffuse B-Cell Lymphoma (n=18). In 21 KTR with available information, only 7 tumors were Epstein Barr Virus positive. Immunosuppression reduction was applied in all but 3 patients. 23 patients were treated: 16 achieved total remission; 3 relapsed; 4 failed to respond. 7 patients died from PTLD (29%). At last follow-up, 58% of KTR had died.

CONCLUSIONS: PTLD prevalence in our cohort of KTR is 0,81%. Tumors were mainly late-onset, monomorphic, high-grade invasive B lymphomas, not EBV-driven. Mortality from PTLD was 29%.

ABSTRACT NUMBER 14

Genotype and outcome after kidney transplantation in Alport syndrome

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OBJECTIVE: Alport syndrome (AS) is caused by mutations in α3/α4/α5 (IV) collagen genes, whose severity determines the progression of AS. Post-transplant outcome is good, though anti-GBM glomerulonephritis occurs in 3-5% of recipients, clustering in patients with a severe mutation. The aim of this study is to assess whether the severity of the underlying AS mutation (COL4A5/A4/A3 genes) affects graft and patient's outcome after transplantation, including the occurrence of anti-GBM nephritis.

METHODS: Retrospective analysis including AS patients with an identified mutation transplanted between 1971 and 2014. Severe mutations included truncating, splice-site and non-sense mutations. Missense mutations and in-frame deletions were considered non-severe.

RESULTS: 73 patients (81% male) had received 93 kidney grafts: COL4A5=57, COL4A3=9, COL4A4=6, heterozygous composite COL4A3 and A4=1. Forty-one patients had a severe mutation (COL4A5:30, COL4A3:6, COL4A4:5) and 32 had a non-severe mutation (COL4A5:27, COL4A3:4; COL4A4:1). Patient survival was similar in patients with severe and non-severe mutations (89% vs 84% at 5 years, 83% vs 75 % at 10, 15 and 20 years (p=0.46). Graft survival was not affected by the severity of mutation (77% vs 63% at 5 years, 60% vs 55 % at 10 years, 55% vs 55% at 15 years, and 55% vs 50% at 20 years (p=0.65). Post-transplant cardiovascular, infectious, neoplastic complications and acute rejection rate were similar in both groups. Anti-GBM glomerulonephritis occurred in one patient with truncating COL4A5 mutation 6 years after transplantation, with crescents and linear IgG deposits leading rapidly to graft loss. Three years after retransplantation, recurrence of anti-GBM nephritis led again to graft loss. Out of 48 grafts biopsies, linear IgG deposits without glomerular lesion were observed in 4 grafts (severe COL4A5 mutation:2, severe COL4A4 mutation:1, missense COL4A5 mutation:1)

CONCLUSION: Anti-GBM nephritis occurred in only 1,4 % of AS patients and in 2.4 % of the subgroup with a severe mutation, which is lower than generally thought. Anti-GBM nephritis may manifest later than previously reported and recurs in a subsequent graft.

ABSTRACT NUMBER 15

Renal Tubular Dysgenesis in a Premature Newborn.

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Inherited renal tubular dysgenesis (RTD) is a rare disease of fetal kidney differentiation, caused by mutations in the genes encoding the components of the renin-angiotensin system (RAS). The RTD phenotype has also been described as a complication of several conditions which result in hypoperfusion of the fetal kidneys such as twin-to twin transfusion syndrome in mono-chorionic twin gestation (in which the donor fetus may develop RTD), major cardiac malformations and severe liver disease (like haemochromatosis). Renal tubular dysgenesis is also described as part of the diabetic embryopathy spectrum. Finally, a few case reports were described where RTD is associated with massive perivillous fibrin deposition in the placenta.

We report a new case of RTD in a premature boy, born at 32 3/7 weeks of gestational age from a G1P0P0 30 year-old-healthy non-consanguineous Moroccan woman through emergency cesarean section for reason of foetal distress and IUGR. Prenatal ultrasound in the 30th gestational week had revealed oligohydramnios progressing to anhydramnios by week 31-32, in the presence of two normally sized kidneys and an empty urinary bladder. No ACE-inhibitors or ATII-receptor inhibitors had been taken before or during pregnancy. Clinical examination at delivery noted multiple dysmorphic features: a large anterior fontanel with broad open sutures, a hypoplastic nasal bridge, low set ears, and bilateral clubfeet. Two hours after delivery severe thrombocytopenia (18. 10 E 9/L) and clotting problems (APTT: 232 sec; fibrinogen:0.40 g/L), occurred. The patient developedsevere metabolic acidosis (BE:-11.9 mmol/L), renal failure (creatinine:2.98 mg/dl),ferritin 125 µg/L(18-464 µg/L) in the absence of septicaemia and/or Ultrasound of the abdomen demonstrated a normal liver with a broad portosystemic shunt between the vena porta and the vena cava inferior. Both kidneys measured 3.6 cm and showed normal corticomedullar differention and somewhat hyperechogenic cortex. The urinary bladder was empty.During hospitalisation there was persistent anuria with severe metabolic acidosis and persistent severe hypotension (inotropics, plasma,physiologic serum, steroids,packed cells).The child died of muli-organ failure on day 3. A liver and kidney biopsy was done shortly postmortem. The liver biopsy showed little tissue, without noticeable defects. The renal biopsy was representative and showed few and poorly differentiated tubular structures. The tubules expressed EMA (marker of distal tubular differentiation), but not CD10 (marker of proximal tubular differentiation). Glomeruli were normal. These findings make the histopathologic diagnosis of RTD. The accompanying placenta showed no abnormalities. Genetic Analysis is ungoing.

We conclude that this premature boy has an inherited autosomal recessive RTD. It is essential to consider this severe disease in anuric foetuses with structurally normal kidneys at sonography in order to allow a kidney biopsy and mutation analysis of RAS genes. Genetic counselling and early prenatal diagnosis is warranted for future pregnancies.

ABSTRACT NUMBER 16

Familial Nephrotic Syndrome due to MCD with diffuse mesangial hypercellularity in Twin Girls.

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We report on a 4-year old African female patient who presented with steroid dependent nephrotic syndrome in whom renal biopsy showed the rare entity of "*Minimal change disease (MCD) with diffuse mesangial hypercellularity (DMH)*". Her renal history starts in 2014, when she was admitted to a PICU service with pneumonia, hypertension and fluid overload. Her lab tests showed renal failure (eGFR 91.5 ml/min/1.73m² Schwartz Paediatric GFR), severe hypoalbuminemia (8g/L), proteinuria (4+) and hematuria (3+). A post-infectious glomerulonephritis was suspected. Additional lab values showed mildly elevated CRP, cholesterol (288 mg/dl) and normal C3, C4 values. Renal biopsy showed diffuse mesangioproliferative changes and minimal endocapillary proliferation. IF was negative for IgA, IgM, C3 and C1Q. IgG trace positive. EM showed no deposits but confirmed diffuse foot process effacement. The patient was treated with diuretics, human albumin and steroids (60 mg/m² QD for 6 weeks, 40 mg/m² alternate day for 4 weeks, followed by taper) and went into complete clinical and biochemical remission. During steroid taper she developed a relapse of severe nephrotic syndrome with ascites. Lab values were normal/negative for CRP, C3 (2/3 samples, 1/3: decrease), C4, IgA, M protein, CIC, cryo's, ANF, ANCA, a-PLAP2-R, HCV, HIV, Hep. A, Mycoplasma (PCR, nasopharyngeal aspirate), and mycobacterium tuberculosis (PCR). α1-antitrypsine was low (69 mg/dl - genetic testing still running). C3d was mildly elevated. Mycoplasma IgM was positive. A (second) renal biopsy was performed which again showed prominent mesangioproliferative glomerulonephritis with trace endocapillary proliferation. IF was again negative (trace IgM). The patient was now treated with high dose steroids + cyclosporin, which resulted in complete remission for >1 year. After that she has developed two additional relapses (gastro-enteritis episode).
2 years later her twin sister similarly presented with steroid sensitive nephrotic syndrome (age 5y12 m). Kidney biopsy showed an identical picture (ie. immunofluorescence negative *diffuse mesangial hypercellularity).* She was treated steroids (60 mg/m² QD for 6 weeks, 40 mg/m² alternate day for 4 weeks, followed by taper) and since then remains in complete clinical and biochemical remission.

In *Classic MCD*, LM shows no glomerular lesions or at most very mild focal mesangial proliferation (not exceeding three or four cells per mesangial area). Presence of more than four mesangial cells per mesangial region affecting at least 80% of the glomeruli defines the rare *diffuse mesangial hypercellularity variant of MCD (3% of all MCD)*. Clinically, unlike children with classic MCD, these patients will often present with hematuria and hypertension and this rare variant is known to be more often steroid resistant. Immunofluorescence is usually negative but low-intensity mesangial IgM (sometimes accompanied by C3 or C1q) staining can sometimes be found. The differential diagnosis also includes the rarely occurring combination of MCD and IgA nephropathy where MCD is accompanied by glomerular IgA deposits.

In conclusion, we describe an African twinpair which suffers from the rare hypercellularity variant of MCD, which is reported to be more steroid resistant. Genetic analysis for podocytopathy is ongoing.

ABSTRACT NUMBER 17

Diagnostic trap for Idiopathic Membranous Nephropathy: about 3 cases

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INTRODUCTION: Idiopathic Membranous Nephropathy (iMN) is characterized by the presence of serum antibodies against Phospholipase A2 Receptor (Anti PLA2-R) in +/- 70% of the patients. Classical immunofluorescence (IF) staining on renal biopsy sample shows diffuse granular IgG and C3 positivity along glomerular basement membranes. The "full house" pattern, corresponding to the positivity for all IF stainings can be detected and result in a diagnostic misinterpretation.

METHODS: We present a case series of 3 patients with overt nephrotic syndrome, in whom a histological diagnosis of lupus MN has been made on the basis of a "full house" IF pattern. In the absence of any clinical and biological signs of systemic lupus erythematosus (SLE), the detection of Anti PLA2-R antibodies led us to the diagnosis of iMN. The main characteristics of the patients are summarized below.

	Case 1 (Male / 39 years)	**Case 2** (Male / 40 years)	**Case 3** (Male / 59 years)
SLE clinical criteria	None	None	None
SLE serological criteria	Negative	Negative	Negative
Renal histology / IF	MN / "full house"	MN / "full house"	MN / "full house"
Circulating Anti PLA2-R antibodies (U/ml; N < 20)	106	2,500	413
PLA2-R expression on renal biopsy	Not done	Not done	Positive
Immunosuppression	RTX	RTX+CsA+PDN+CYC+ MMF	Csa+MMF+PDN+CYC
Evolution to end-stage renal failure / overt SLE	Unknown / No	Yes / No	Yes / No

RESULTS: A « full house » IF pattern can erroneously lead to the diagnosis of lupus MN. Searching for the presence of serum Anti PLA2-R antibodies and/or PLA2R expression on renal tissue was crucial in establishing the final diagnosis of iMN. To our best knowledge, only one patient with iMN associating Anti PLA2-R antibodies and a "full house" IF pattern has been reported in the literature. As far as we know, our patients did not develop overt SLE but the renal outcome was poor for 2 of them.

CONCLUSION: The detection of circulating Anti PLA2-R antibodies in MN with a "full house" IF pattern is helpful to confirm the diagnosis of iMN.

ABSTRACT NUMBER 18

Should we drastically reduce immunosuppression to treat BK viremia after kidney transplantation? Results from a monocentric retrospective study.

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OBJECTIVE: Minimization of immunosuppression (IS) is the gold-standard treatment of BK viremia after kidney transplantation (KT). However its precise modalities remain to be clarified. The aim of this work was to compare two strategies of minimization.

METHODS: This is a retrospective study including 112 KT recipients between 04/2007 and 08/2015, with at least 2 consecutive positive plasma viremia (>2.7 log10) after KT. The cohort was divided into two groups: a less intensive tapering and monitoring group (LIg, n=58) before 2012 and a more intensive tapering and monitoring group (MIg, n=54) after 2012.

RESULTS: Baseline demographic and immunologic characteristics were similar. The number of plasma BK PCRs performed during the first year was higher in the MIg (15 vs 3, p<0.001). BK viremia was detected sooner after KT (99 vs 151 days, p=0.033), was higher (5.4 vs 4.6 log10, p=0.023) but shorter (105 vs 384 days, p<0.001) in the MIg compared to LIg. At BK viremia onset, daily dose of mycophenolic acid (MPA, p=0.151) and tacrolimus trough levels (Tac, p=0.863) were similar. However, time to reach 50% of MPA dose reduction (16 vs 39 days, p=0.063) and to reach MPA withdrawal (43 vs 92 days, p=0.057) were shorter in the MIg compared to LIg. Tac trough levels were also lower (5.3 vs 6.3 ng/mL, p=0.006) in the MIg 3 months after BK viremia onset. One year after BK viremia, incidence of graft loss (4% vs 4%), biopsy-proven acute rejection (22% vs 17%) and estimated glomerular filtration rate (45 vs 45 mL/min/m²73) were similar in the MIg and LIg, respectively. Incidence of *de novo* donor-specific antibody (DSA) was higher (18% vs 4%, p=0.04) in the MIg and 1000-days *de novo* DSA free survival was lower in the MIg (log-rank, p= 0.067).

CONCLUSION: Intensive IS reduction shortens BKV, doesn't affect medium term graft outcome and is associated with increased incidence of *de novo* DSA.

ABSTRACT NUMBER 19

Long-term kidney outcome in children treated with peritoneal dialysis after surgery for congenital heart disease

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OBJECTIVE: Acute kidney injury (AKI) occurs in 30-45% of children after surgery for congenital heart disease[1]. Especially in infants, peritoneal dialysis (PD) is an often-used modality of renal replacement therapy (RRT). AKI plays an important role in the development of chronic kidney disease (CKD) [1]. Data on the long term kidney outcome of children who required RRT for cardiac surgery associated AKI are scarce. The aim of the present study was to investigate the long-term kidney prognosis of children who had AKI treated with PD, after surgery for congenital heart disease.

METHODS: We conducted a single centre cohort study. We included all children (0-15yrs) who underwent surgery for congenital heart disease in the period 2000-2010, and who had AKI treated with PD. Long term kidney function was assessed by the glomerular filtration rate (eGFR) estimated by the Schwartz formula. Data are reported as n (%) or median (interquartile range).

RESULTS: A cohort of 1293 children underwent cardiac surgery; of whom 30 (2.3%) developed postoperative AKI that was managed with PD. Twelve (40%) patients died during the immediate postoperative period. The remaining 18 patients (60%) were included in the present study. Of those, median age was 72.5 days (8-244) and 6 were neonates. Median preoperative eGFR was 42.6ml/min/1.73m^2 (34.6-48.6). The indications for PD were clinical fluid overload with concurrent oliguria or anuria (77.8%), hyperkalemia (55.6%) or metabolic acidosis (22.2%). Cardiac follow up was performed on yearly basis in all 18 survivors. Kidney follow up was not consistently: 4 patients (22.2%) were without any serum creatinine recording since discharge. For the other patients, we noted that creatinine was only ordered when the patients were evaluated for an acute disorder. Of the 14 patients with kidney function follow up, median eGFR was 105ml/min/1.73m^2 (68.4-139.7). Five patients (35.7%) had an eGFR < 90ml/min/1.73m^2 of whom 2 patients (14%) had an eGFR < 60ml/min/1.73m^2. None of the patients had assessment of proteinuria.

CONCLUSION: In a cohort of patients who underwent cardiac surgery for congenital heart disease and who had AKI treated with PD in the postoperative course, we found that follow up of kidney function was limited and even absent in one out of five patients. In those who had kidney function evaluated, we found that kidney function was decreased in almost one third of patients.

[1]Madsen NL et al. Cardiac surgery in patients with congenital heart disease is associated with acute kidney injury and the risk of chronic kidney disease. Kidney Int 2017; April 12.

ABSTRACT NUMBER 20

Hyperhomocysteinemia: a trigger for complement mediated TMA?

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BACKGROUND: thrombotic microangiopathies (TMA) are a broad spectrum of diseases that present with hemolytic anemia, thrombocytopenia and end-organ dysfunction caused by an uncontrolled formation of thrombi in the microvasculature. Hemolytic uremic syndrome (HUS) is a form of TMA which encompasses both STEC HUS as atypical HUS with a genetic or acquired dysregulation of the complement alternative pathway. Cobalamin C (cblC) is a rare genetic form of aHUS caused by a mutation in the methylmalonic aciduria and homocystinuria type C (MMACHC) gene. Here, we present a case of a patient with hyperhomocysteinemia and two mutations in both complement factor H (CFH) and complement factor B (CFB) developing acute renal failure with thrombotic microangiopathy.

CASE PRESENTATION: a 34-year old Northern-African patient, without prior history, presented with sudden visual loss, malignant hypertension (220/113 mm Hg) and severe kidney failure (serum creatinine 14 mg/dL, eGFR 4 ml/min/1.73m² CKD-EPI). Fundoscopy revealed papillary edema and retinal hemorrhage. Laboratory testing demonstrated a microangiopathic hemolytic uremic syndrome with thrombocytopenia (minimal 83000/µl), increase in LDH (730IU/l), and undetectable haptoglobin level.
After treatment of the malignant hypertension, the hemolysis was rapidly controlled with normal LDH and thrombocytes. A renal biopsy was performed which confirmed the diagnosis of thrombotic microangiopathy with edema of the intima and numerous intravascular thrombi.
75% of the glomeruli were obsolete and there was 30% of interstitial fibrosis.
Because of the rapid improvement of hemolysis, no additional therapy was started.
However, given the young age and the sudden-onset aHUS diagnostics were performed.
This showed to our surprise normal complement factor proteins but a very high level of homocysteine (70.5 µml/l). C3 (0.7 g/dl) at that time was decreased. Methylmalonic acid testing was negative. Genetic testing showed a heterozygous sequence variant c.2488C>T (p.Arg830Trp) in the complement controlling CFH gene and a heterozygous sequence variant c.1693A>G (p.Lys5655Glu) in the complement activating CFB gene. Mutation prediction software showed possible pathogenicity for both mutations.
In light of the hyperhomocysteinemia, testing for CblC deficiency was negative. The patient did show a homozygous mutation, c.665C>T (p.Ala222Val), in the gene encoding MTHFR. This mutation gives rise to a thermolabile variant of the enzyme with reduced activity leading to hyperhomocysteinemia.

CONCLUSION: Many advancements have been made in identifying the genes involved in the uncontrolled activation of the complement alternative pathway leading to aHUS. It is however unclear what brings the whole event in motion. Injured endothelium might be that trigger. The patient presented in this case showed both mutations in the complement alternative pathways, as well as hyperhomocysteinemia due to a homozygous mutation in MTHFR. One could postulate that the very high levels of homocysteine could have triggered the development of TMA by damaging the endothelium. This could have led to uncontrolled activation of the complement alternative pathway leading to TMA. Other causes of hyperhomocysteinemia are known to be an independent risk factor for cardiovascular disease and venous thrombo-embolisms. However, besides the mutation in MMAHC none of them have been linked to TMA.

ABSTRACT NUMBER 21

Macrophage enzyme chitotriosidase reflects long-term cystine accumulation in cystinosis

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OBJECTIVE: Cystinosis is an autosomal recessive lysosomal storage disorder characterized by early renal damage. Strict compliance to the cystine depleting agent cysteamine is necessary for more efficient treatment. Leucocyte cystine is the current therapeutic monitor. Although highly specific, its use is hindered by many technical
difficulties and its availability in only few laboratories. Recent evidence suggests that inflammatory cells play a major role in the pathogenesis of cystinosis and its rapid progression to ESRD. Macrophage activation markers, such as chitotriosidase and several cytokines have been linked to disease severity and response to cysteamine therapy in cross-sectional studies. We aim to assess the longitudinal clinical value of these markers as potential therapeutic monitors in a large cohort of cystinosis patients.

METHODS: Fifty four patients (19 children and 35 adults) were recruited from the cystinosis clinics in Leuven (Belgium), Nijmegen (Netherlands) and Traunstein (Germany). Patients were followed-up for two years during which, clinical and laboratory data were regularly collected from hospital records. Every three months, plasma samples were obtained to analyze chitotriosidase and other cytokines. These markers were correlated with leucocyte cystine concentration and with other parameters of renal disease such as, serum creatinine and urinary albumin/creatinine ratio.

RESULTS: Cystinosis patients showed large variation in compliance/response to cysteamine therapy. Average leucocyte cystine concentrations over two years ranged from 0.65 to 5.8 nmol ½ cystine/mg protein. During the first year of the study, plasma chitotriosidase activities ranged from 2 to 834 nmol/ml plasma/h in cystinosis patients
(reference range <55 nmol/ml plasma/h). Chitotriosidase activities correlated with individual cystine measurements ($r=0.432$, $P=0.002$). More importantly, the correlation was stronger with the average cystine values ($r=0.582$, $P<0.001$).

CONCLUSION: Chitotriosidase activity correlates with long-term cystine concentrations and can be used for the therapeutic monitoring of cysteamine therapy in nephropathic cystinosis.

ABSTRACT NUMBER 22

De novo atypical haemolytic and uremic syndrome after kidney transplantation

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A 26-year-old female patient with end-stage renal disease due to Hinman syndrome underwent low-immunological risk kidney transplantation (KT) with a familial living donor (her mother). Her past medical history was relevant for uncomplicated urinary infections. Her immunosuppressive regimen included an induction with Basiliximab and tacrolimus, mycophenolate mofetil and steroids. She was discharged at day 11 after KT with a normal creatinine level (1.20 mg/dL, normal: 0.60-1.30 mg/dL).
At day 40 and 120 after KT, the patient presented 2 kidney graft pyelonephritis associated with biological signs of thrombotic microangiopathy (TMA) including non-immune haemolytic anemia with elevated schizocytes level, acute kidney injury (creatinine at 6 mg/dL during the second episode) and thrombocytopenia. Complement levels were normal. Kidney graft biopsy performed during the second episode showed thrombi obstructing preglomerular arterioles in several glomeruli and mesangiolysis. There was no other sign of antibody-mediated rejection (no glomerulitis or peritubular capillaritis, negative C4d staining and constant negativity of anti-HLA screening by single antigen bead assay). After exclusion of secondary causes of TMA (negative pregnancy test, no severe hypertension or toxic levels of tacrolimus, no argument for cancer, negative auto-immune screening for antinuclear factor and antiphospholipid syndrome, PCR CMV, parvovirus B19 and EBV negative, ADAMTS 13 activity normal), we screened the alternative pathway of complement activation. Anti-factor H antibody screening was negative, but the genetic screening of the regulatory proteins of the alternative pathway demonstrated a pathogenic mutation of cofactor I (CFI) (c148C>G). Upon receipt of the genetic results, plasma exchanges were initiated (3 times a week) for one week followed by Eculizumab treatment (900 mg/week during the first month and then 1200 mg/2 weeks, still ongoing at 6 months follow-up). Creatinine decreased slowly to reach 2.1 mg/dL and TMA did not recur. A biopsy performed 2 months after Eculizumab initiation showed a disappearance of acute signs of TMA.
A genetic screening performed on the patient's mother (the donor) revealed the same CFI mutation. Noteworthy, she never showed signs of TMA, especially after graft donation.

In conclusion, our patient had a genetically proven atypical haemolytic and uremic syndrome which became symptomatic in the course of severe infections after KT. This case highlights the importance of a systematic screening of post-KT TMA including a rapid genetic testing of the alternative pathway. Eculizumab seems efficient in our patient.

ABSTRACT NUMBER 23

A prospective qualitative study on stakeholders' perspectives and perceptions on current practice of care for patients with chronic kidney disease: one size does not fit all

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INTRODUCTION: Chronic kidney disease (CKD) is a condition with an estimated prevalence of >10% in Western countries, with increasing prevalence with older age. Therefore prevention, screening and awareness are of utmost importance. In 2009 the ***care trajectory*** entitled "chronic kidney disease (CKD)" was introduced in Belgium on a ***nation-wide*** scale. In this study, we **aimed** to evaluate the current stakeholders' perspectives and perceptions on current practice of care for patients with CKD**.**

METHODS: *Patients* were recruited in the outpatient clinic and dialysis unit and asked to fill in a questionnaire. Patients were recruited from different patient groups: CKD stage 1-4, CKD stage 4-5, hemodialysis, peritoneal dialysis and recipients of a renal allograft. General practitioners were recruited through the Local Multidisciplinary Network, both through email and postal mailing with a reply-paid envelope for its return. Nephrologists were recruited through the email list of the Network. All caretakers were asked to fill in a structured questionnaire. This had four main questions: Who do you consider to be the physician with final responsibility for your CKD patients and why? How do you perceive the current share of the GP in the care for patients with CKD? Do you agree with the following two statements?: 1. The GP should increase his/her role in chronic care for patients with CKD. 2. The GP is better capable in providing chronic care for patients with CKD than the nephrologist.

RESULTS: *A total of 455 patients were questioned. This included 199 patients with CKD (103 CKD4-5), 130 patients on hemodialysis, 22 patients on peritoneal dialysis and 104 renal transplant patients.* Of the 140 GPs invited, 54 (39 %) filled in the questionnaire either online or sent it back through mailing. *In the total patient population 84% chose the nephrologist as their treating physician. In the dialysis and transplanted population this number is even higher. In response to the question why do you consider your nephrologist to be your treating physician, the majority (77%) gave the regular outpatient visits as reason.* In case of acute illnesses, patients go to the GP for treatment, except for patients on dialysis. For dialysis patients the majority of both GPs and nephrologists indicate that the nephrologist should have final responsibilities. On the other hand, when asked about specific tasks of primary care (eg vaccination) GPs still indicate this to be their task, also in dialysis patients. The majority of GPs and nephrologists consider the current share of the GP in care for dialysis and transplanted patients as sufficient or more, in predialysis however the majority of nephrologists find this insufficient. This is also reflected in the response to the question whether the GPs should increase their role in the care for patients with CKD. Both GPs and nephrologists are convinced that the GP is better capable in providing chronic care for predialysis patients with CKD. For patients in dialysis and after transplantation this is less clear with the majority of nephrologists disagreeing with this statement. Insufficient knowledge of renal pathology and treatment is recorded as the main hurdle for increase in contribution of the GP in the care for patients with CKD.

CONCLUSION: Both nephrologists and GPs acknowledge the primary role of the GP in the coordination of care in patients not yet in dialysis. Furthermore, both GPs and nephrologists are convinced that the GP is better capable in providing chronic care for predialysis patients with CKD. For patients in dialysis and after transplantation this is less clear. Our study illustrates that one size does not fit all in the care for patients with CKD and underlines the need for agreements on the division of tasks between nephrologists and GPs.

ABSTRACT NUMBER 24

Immune checkpoint inhibitors in kidney transplant recipients

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OBJECTIVES: Immune checkpoint inhibitors (ICIs) have emerged as powerful tools in the management of advanced cancers. As they stimulate immune responsiveness, their use can be difficult in kidney transplant recipients (KTR) under immunosuppressive therapy.

METHODS/MATERIALS: We describe the clinical course of a KTR with metastatic lung cancer treated with ICIs and review the available literature.

RESULTS: A 56-year-old man was transplanted with a kidney from a deceased donor in 2014 for end-stage renal disease secondary to cholesterol embolization syndrome. His immunosuppressive treatment included tacrolimus, mycophenolic acid (MPA) and methylprednisolone. In 2015, he was diagnosed with stage IV non-small cell lung cancer (cT4N3M1a). MPA was discontinued, and chemotherapy with pemetrexed and carboplatin was initiated in October 2015. After an initial partial response, the disease progressed, justifying second-line chemotherapy (docetaxel and nintedanib) in June 2016 that failed to induce a significant clinical response. A third-line treatment with nivolumab, a monoclonal antibody against the programmed cell death 1 (PD-1) receptor was considered. The risk of acute rejection and graft loss was discussed with the patient. Tacrolimus was switched to everolimus and methylprednisolone dose was increased. He received five cycles of nivolumab. His renal function remained stable during the treatment. Unfortunately, an unfavourable oncological evolution after the fourth cycle of ICIs administration was observed that led to reinitiate chemotherapy with pemetrexed and carboplatin. Subsequently, a significant regression of the disease was noted. The patient is still alive in June 2017, with a good performance status (ECOG 1).

CONCLUSIONS: Our case shows that although there is a risk of acute rejection, ICIs can be used in KTR after adjusting immunosuppression. The late favourable oncologic response might be a delayed response to the anti-PD1 but this remains to be investigated.

ABSTRACT NUMBER 25

Laxative abuse as risk factor for kidney stones

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A 32 year old nurse was referred to the stone clinic for metabolic work-up after 3 episodes of renal colics. A stone could not be retrieved for analysis, but microscopic examination of the urine showed the presence of calcium-oxalate crystals. In her previous history she mentionned migraine for which she regularly took sumatriptan, ibuprofen and paracetamol. She denied any substance abuse, including laxatives. She also denied any episode of diarrhea.
Blood analysis showed normal calcium, PTH and bicarbonate values. Urine analysis in four 24 hour collections was as follows:

URINE ANALYSIS	First collection	Second collection	Third collection	Fourth collection
Diuresis ml/24h	750	900	1750	1700
pH	6.02	5.97	6.21	6.02
Potassium mmol/24h	13.2	13.4	8.9	5.7
Natriuria mmol/24h	17	7.8	10	12.6
Calciuria mmol/24h	5.3	3.1	9.6	5.7
Magnesuria mmol/24h	3.8	2.8	6.2	3
Citraturia mg/24h	8	15	25	42
Oxaluria mg/24h	18	17	20	18

The first two collections showed low diuresis and hypocitraturia as risk factors for stone formation, but at the same time they showed very low potassium and sodium. This was suggestive of extrarenal loss of sodium and potassium. A third collection confirmed the extrarenal loss of sodium and potassium, but this time calciuria and magnesuria were high. A fourth collection confirmed the first two collections and a screening for laxatives was positive for bisacodyl.

CONCLUSION: In retrospect, the patient admitted in using laxatives, thus explaining the very low citrate, potassium and sodium in all collections. During the third collection, she had used magnesium-containing laxatives, thus explaining the high magnesium and calcium in this collection. We conclude that laxative abuse resulting in hypocitraturia and lower diuresis can be a risk factor for kidney stones.

ABSTRACT NUMBER 26

An unusual case of paraneoplastic nephrotic syndrome in a patient with chronic lymphocytic leukemia

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OBJECTIVE: Although frequent, chronic lymphocytic leukemia (CLL) is very rarely associated with glomerular disease. We report a case of a 76-year-old man with untreated CLL for 3 years and who rapidly developed overt nephrotic syndrome (NS) and renal failure. Renal biopsy resulted in the histological diagnosis of membranoproliferative glomerulonephritis (MPGN).

METHODS AND RESULTS: Our patient's hematological malignancy was diagnosed in 2013 (13q deletion) and did not require specific treatment until the end of 2016. He presented with asthenia, dyspnea and a significant edema of the lower limbs (weight gain 5 kg). Biological abnormalities were the following: a moderate anemia (Hb 10.1 g/dl), an increase in serum creatinine to 2.4 mg/dL (eGFR reduced to 24 ml/min /1.73 m^2 according to CKD-EPI), a severe hypoalbuminemia (19 g/l), increased total cholesterol to 358 mg/dl and a massive proteinuria (13 g/24h). Microscopic hematuria was present. Interestingly, leukocytosis had dramatically increased to 133,170/µl (lymphocytes 111,860 /µL; Rai III, Binet B). Abdominal ultrasonography showed 2 kidneys with normal size, without hydronephrosis and a marked splenomegaly. Levels of C3 and C4 were normal, hypogammaglobulinemia was observed, no circulating paraprotein and no cryoglobulinemia was detected. The level of kappa chain was increased (2.14 mg/dl) but the kappa / lambda ratio was normal. Search for autoimmunity was negative, including hepatitis serum markers. Renal biopsy under ultrasound control was performed last April. Light microscopy revealed typical lesions of endocapillary proliferation with focal polymorphonuclear infiltration, a double contour aspect of the capillary walls and a slight increase in mesangial matrix. Immunofluorescence stainings were positive for IgG, C3, lambda and traces of IgM within basal membranes and mesangial deposits (no anti-C1Q or anti-IgA). Chemotherapy with chlorambucil 6 mg/day (14 days) and methylprednisolone 32 mg/day was initiated, resulting in a sharp reduction of lymphocytosis. A dose of Gazyvaro® (obinutuzumab) was then given in the beginning of June. AAs lower limb infiltration was uncontrolled with bumetanide alone (10 mg/day), continuous venovenous hemofiltration had to be started for 3 days during a short hospital stay. Detection of TP53 mutation in the CLL cells, by next generation sequencing has allowed to initiate a treatment by ibrutinib (420 mg/day). After a peak of serum creatinine reaching 3.5 mg/dl, this parameter decreased to 2.8 at the last control. The body weight is now stable but nephrotic syndrome is still present.

CONCLUSIONS: Immune complex-mediated MPGN may be associated with progressing CLL, causing severe NS and renal failure. According to the literature, initiation of chemotherapy is mandatory and may induce complete or partial remission of NS with improvement of renal function parameters. A careful onco-nephrological follow-up is recommended in order to assess the renal outcome.

ABSTRACT NUMBER 27

A Clinicopathological Review of Renal Cell Carcinoma Diagnosis in Tuberous Sclerosis Complex

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ABSTRACT NUMBER 28

An intriguing case: all that hemolysis isn't aHUS

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BACKGROUND: Differential diagnosis when a patient presents with thrombotic microangiopathy (TMA) are thrombotic thrombocytopenic purpura (TTP) and hemolytic uremic syndrome (HUS). However differential diagnosis is more complex; especially in patients presenting with normal ADAMTS 13 the cause of HUS needs to be explored;

THE CASE:
A 68 year old patient, with a medical history of diabetes, benzodiazepine abuse, gastric bypass and recent cataract surgery, presented to the emergency room with confusion and tremor for a couple of days. Anamnesis was difficult considering her neurological symptoms but hetero-anamnesis revealed she had taken NSAID's for two weeks for pain at the right hip. Three days for admission, she stopped taking benzodiazepines because of deterioration of wellbeing. Two days before admission, she had some looser stools. At admission her lab results showed an acute kidney injury (AKI according to the Kidney Disease Improving Global Outcomes [KDIGO] definition) with a serum creatinines level of 1.96 mg/dL, microangiopathic Coombs negative hemolytic anemia (increased schistocytes, increased LDH, unmeasurable haptoglobine), thrombocytopenia (49x10*3/mm3), consistent with trombotic microangiopathy. After taking the necessary samples for complement dysfunction and ADAMTS-13, plasmapheresis was started with hematological response the day after admission (decreased LDH, thrombocytes increase 116x10*3/mm3). Her renal function and neurological condition however deteroriated. The patient became oliguric with a serum creatinine level of 2.37 mg/dL, requiring dialysis for two days. Her ADAMTS-13 level was 60% (>10%), so TTP could be excluded. Despite this intensive treatment with plasmapheresis, her neurological condition worsened with a tonic-clonic epileptic insult. She was treated with Keppra and decrease in consciousness with need for intubation. She was subsequently transferred for evaluation for treatment with eculizumab. Because of the discrepancy (although not impossible) between the neurological deterioration and the hematological and renal evolution with a differential diagnosis of benzodiazepine withdrawal syndrome an urgent MRI was performed. This demonstrated posttraumatic lesions, a frontal subdural hematoma , but no typical TMA lesions such as ischemic or hemorrhagic infarctions, venous thrombosis or PRES. Therefore, treatment with eculizumab wasn't started yet. Symptomatic treatment with anti-epileptic drug and plasmapheresis was continued. Patient was vaccinated against meningococcal infection pending results of the complement components alterations.
Anti-E.Coli Antibody testing was negative, but to our surprise, PCR of the stools were positive for Verotoxin production E Coli. Plasmapheresis was continued with an improvement of neurological status for one week. At moment of discharge from hospital, signs of hemolysis were no longer presented. Her renal function further improved with a serum creatinine of 1.18 mg/dl (serum creatinine in 2013 was 0.86 mg/dL).

CONCLUSION: Our case illustrates the need for a thorough diagnostic evaluation in all patients presenting with thrombotic microangiopathy. The evaluation of stools and MRI changed the therapeutic approach. Therfore, we wanted to highlight the importance of thorough diagnostic tests. Examination of the patients anti-E.Coli antibody testing were negative, nonetheless driven diagnostics showed us the presence of Verotoxin producing E.Coli.

ABSTRACT NUMBER 29

Osmotic Conductance to Glucose and the Impact of Residual Volume in Peritoneal Dialysis

Anne-Lorraine Clause, Mehdi Keddar, Ralph Crott, Eric Goffin, and Johann Morelle

OBJECTIVE: In end-stage renal disease patients treated with peritoneal dialysis (PD), the osmotic conductance to glucose (OCG) represents the intrinsic ability of the membrane to transport water in response to a crystalloid osmotic gradient. A progressive loss of OCG in long-term PD patients indicates the development of fibrosis in the peritoneal interstitium, and contributes to identify patients at risk for encapsulating peritoneal sclerosis. The double mini-peritoneal equilibration test (PET) has been proposed as a simple method to assess OCG by the difference in initial ultrafiltration rates generated by two successive dwells using 1.36% and 3.86% glucose-based, 1-h PET. However, the presence of a large peritoneal residual volume (RV) may potentially interfere with the correct evaluation of net ultrafiltration, thereby limiting the reliability of OCG assessed by the double mini-PET.

METHODS: We retrospectively reviewed the data from 53 peritoneal function tests in 35 consecutive PD patients starting PD at our center between March 2013 and March 2017. The test consisted of a uni-PET (double mini-PET combined with a 3.86%, 4-h PET) performed at PD start then yearly. In addition to peritoneal solute transport rate and net ultrafiltration, the tests provided information about osmotic water transport (OCG, sodium sieving and free-water transport) as well as the RV estimated from albumin dilution.

RESULTS: Contrarily to sodium sieving, net ultrafiltration and free-water transport, OCG did not correlate with any of the other parameters of osmotic water transport. In multivariate regression analyses, the RV was identified as the only determinant of OCG, while it did not alter the robust association between sodium sieving/free-water transport and their respective determinants. Higher values of OCG, along with an increase in the absolute difference between normalized values of sodium sieving and OCG, were observed during tests with the largest RV (fourth and fifth quintiles), as compared with those with normal or low RV. Considering only baseline tests or the whole series of tests – irrespective of the time on PD – did not influence these observations.

CONCLUSIONS: A high RV leads to a significant overestimation of OCG using the double mini-PET, thereby potentially reducing the ability of OCG to identify patients with progressive fibrosis in the peritoneal interstitium. On the contrary, we confirm that the sieving of the dialysate sodium - which is a biochemical measure - is independent of the RV and may therefore be more reliable than volumetric assessment of OCG. A call for caution is warranted to avoid misinterpretation of OCG values derived from the double mini-PET, especially in long-term PD patients who are potentially at risk of encapsulating peritoneal sclerosis.

ABSTRACT NUMBER 30

The Critical Role of the NLRP3 Inflammasome in Peritoneal Dialysis-Related Peritonitis

Nicolas Hautem, Johann Morelle, Amadou Sow, Cyril Corbet, Olivier Feron, Eric Goffin, François Huaux, Olivier Devuyst

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ABSTRACT NUMBER 31

C3 glomerulonephritis and the c.463A>C variant in C3 gene: What does it mean to the clinician?

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ABSTRACT NUMBER 32

Carbonic Anhydrase Activity and Acid-Base Regulation in Peritoneal Dialysis

Amadou Sow, Johann Morelle, Nicolas Hautem, Carla Bettoni, Carsten Wagner, and Olivier Devuyst

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ABSTRACT NUMBER 33

Double THSD7A4 and PLA2R-related membranous nephropathy in a patient with chronic hepatitis B viral infection: an unusual dilemma for adequate classification and treatment

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OBJECTIVE: Recent identification of podocyte specific antigens such as neutral endopeptidase, phospholipase A 2 receptor (PLA2R) and thrombospondin 7 domain 4 (THSD7A) and corresponding autoantibodies (Ab) amazingly shifted paradigms in the clinical management of idiopathic membranous nephropathy (iMN). However, accurate interpretation of circulating anti-PLA2R1 and THSD7A Ab in secondary MN still remains unclear. We report here an uncommon observation of double positive PLA2R and THSD7A case of MN in a patient with chronic hepatitis B virus (HBV) infection.

METHODS AND RESULTS: A 41-year-old man presented in our nephrology department in 2015 because of significant weight gain and lower limbs edema. His medical history included HTLV-1 infection complicated by spastic paraplegia, chronic HBV infection, arterial hypertension, polyclonal gammapathy of unknown significance (IgG kappa and IgG lambda) and septicemia secondary to bacterial infection of coccygeal pressure sores and heels in 2014. His daily treatment consisted in simvastatin, enoxaparin, perindopril, amlodipine and cholecalciferol. Blood tests upon admission showed a microcytic regenerative anemia (hemoglobin S positivity), an inflammatory syndrome, normal plasma creatinine (Cr) level, hypoalbuminemia, hypercholesterolemia and hypertriglyceridemia. The protein/Cr ratio was 3 g/gCr in urinary spot. Liver and pancreas tests were in the normal range. Beside positive HBs Ag, anti-HBcore and anti-HBe Ab with negative serological testing for HBe Ag, a systematic screening for hepatitis C virus, HIV (performed by ELISA), anti-nuclear and anti-neutrophil cytoplasmic Ab, syphilis serology, anti-glomerular basement membrane Ab was negative.
Ultrasonography showed the normal size and structure of both kidneys. Kidney biopsy showed 34 glomeruli (4 with glomerulosclerosis) with intact tubulointerstitial compartment. Marked extramembranous granular deposits of IgG, IgA, C3, kappa and lambda chains were detected as well as an enhanced PLA2R antigen expression but absence of IgM, C1q, HBsAg and HBc Ag staining. On July 2015, considering HBV infection, we advised tenofovir therapy. Three months later, cyclosporine A (CsA 100 mg twice daily) was started in order to control proteinuria. Renal function remained stable after 4 months but nephrotic syndrome was still present. Repeated investigations for circulating anti-PLA2R Ab were negative. However, we found circulating anti-THSD7A Ab in two different serum samples obtained within a 5 months time interval (level 1/10). After 3 months of CsA treatment, circulating anti-THSD7A Ab decreased to the borderline level.

CONCLUSIONS: Anti-PLA2R and anti-THSD7A Ab are present respectively in nearly 70% and 10% of iMN cases reflecting autoimmune MN. Beside serum assessment for anti-PLA2R and anti-THSD7A Ab work-up of MN cases should be completed by renal biopsy study for corresponding PLA2R and THSD7A antigens expression. Our clinical observation underlines the importance of serum and kidney tissue assessments not only in the case of iMN but also in case of commun condition associated with MN such as HBV infection.

ABSTRACT NUMBER 34

Identification of anti-PLA2R1 and anti-THSD7A antibodies in idiopathic membranous nephropathy using indirect immunofluorescence assay: retrospective study of case series

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OBJECTIVE: The membranous nephropathy (MN) is characterized by presence of immune complexes within extracapillary deposits and is a main cause of nephrotic syndrome in adults. Nearly 30% of MN is related to extrinsic or intrinsic antigens. In remaining 70% of idiopathic MN, circulating anti-PLA2R and anti-THSD7A antibodies recognize autoimmune MN (aMN) nearly in 80% and 10% respectively. We aimed to establish the occurrence of aMN in case series of membranous nephropathy followed or referred to our center.

METHODS AND RESULTS: We applied an indirect immunofluorescence assay to detect anti-PLA2R and anti-THSD7A antibodies in MN patients archive serums in parallel with PLA2R1 antigen immunostaining on kidney biopsy tissue.
We found circulating anti-PLA2R antibodies (variable level from 1/10 to 1/100) in 5 of 12 MN patients (41.6%).
Within 7 of anti-PLA2R positive samples (including follow-up samples), 3 (42.8%) of them were obtained without and 4 (57.2%) were obtained under immunosuppression. We observed enhanced PLA2R1 antigen glomerular expression in 8 of 9 studied patients (88.9%), 2 (40%) of them presented recurrent PLA2R1 MN in kidney graft. We detected anti-THSD7A antibodies only in one PLA2R1 MN patient with chronic hepatitis B viral infection (8.3%).

CONCLUSIONS: Autoimmune MN was mainly related to anti-PLA2R antibodies in our case series of iMN. Anti-PLA2R and THSD7A antibodies were not exclusive as we identified one double anti-PLA2R and anti-THSD7A aMN patient. Recurrence of PLA2R aMN after kidney transplantation needs to be considered and was detected in more than one third of our patients.
Actually, besides assessment of circulating antibodies, study of expression of corresponding antigens PLA2R and THSD7A within glomerular deposits is mandatory in the work-up of all MN patients.

ABSTRACT NUMBER 35

Pseudotumoral caecal lesion in a hemodialysed patient : what is your diagnosis ?

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OBJECTIVE. Haemorrhagic and (pre-) neoplastic lesions of the digestive tract are frequent in dialyzed patients. Drugs may also be directly involved. We hereby report an illustrative clinical case.

METHODS AND RESULTS. A 73-year-old man suffering from end-stage hypertensive nephroangiosclerosis and treated by hemodialysis for 5 years was urgently admitted for acute abdominal pain mainly of the right flank. His personal medical history included treated hypertension, ischemic heart disease, type 2 diabetes, recurrent gastric ulcer, a non-small cell lung carcinoma (lower left lobectomy in 2011) and a tubulovillous colic adenoma with moderate dysplasia (2013). His treatment included sevelamer carbonate pills (Renvela® 800 mg) taken twice a day for 7 months prescribed in order to control hyperphosphatemia. Upon admission, biology revealed a mild inflammatory syndrome (C-Reactive Protein [CRP] 100 mg/l, total leucocyte count increased to 11,800/mm3). Abdominal CT-scan showed a thickening of the caecal wall and fat inflammation in the pericaecal area. After 10 days of empirical treatment with amoxicillin/clavulanate (Augmentin®), symptoms improved and CRP decreased. A colonoscopy performed a few weeks later detected an ulcerated, medium-sized and non-haemorrhagic pseudotumoral mass within the caecum. Biopsies showed multiple fragments of a deeply ulcerated mucosa, covered by a fibrino-leukocytic exsudate rich in polymorphonuclear neutrophils. Irregularly shaped eosinophilic and yellowish crystals, typically resembling fish scales, were found upon the surface of the colic epithelium. Those histopathological features are characteristic of sevelamer-associated colitis, a new entity firstly described in 2013 (1). Sevelamer was discontinued and clinical symptoms resolved. The disappearance of caecal lesions as well as sevelamer crystals was confirmed in control colic biopsies performed 3 months later.

CONCLUSION. The diagnosis of sevelamer-associated colitis should be suggested in all dialyzed patients suffering from abdominal pain. Up to now, only several cases reporting such sevelamer-associated complications in patients on dialysis (haemorrhages, perforations, ischemic colitis) have been published. The presence of specific crystals along different parts of the digestive tract mucosal wall confirms the diagnosis.

(1) B.J. Swanson, et al. Am J Surg Pathol, 37 (2013), pp. 1686-1693

ABSTRACT NUMBER 36

The transition from a pediatric to an adult clinic in the young transplanted population: a Belgian experience.

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OBJECTIVES: To describe outcomes (incidence of acute rejections (AR), graft function, graft and patient survival, adherence to treatment) during the 3 years before and after the transfer, in a population of kidney transplant patients who experienced the transition from a pediatric to an adult university transplantation center in Brussels.

METHODS: Retrospective cohort study including all kidney transplanted patients transferred between January 1985 and January 2016 from a pediatric to an adult university transplantation center in Brussels. The coefficient of variation of calcineurin inhibitors blood levels (CoV%) was used to evaluate medication adherence.

RESULTS: 182 children have been transplanted before 2015: 34 (19%) are still followed in the pediatric center; 28 (15%) have been transferred to other adult transplantation centers, 4 (2%) have been lost of follow-up, 28 (15%) lost their grafts before transition, 8 (4%) died before transition and, for 62 (34%) patients, there was a lack of data. Eventually, 18 (10%) have been transferred to the main adult transplantation center with an average age at transfer of 24,4 years. During the 3 years post- transfer, two patients lost their grafts, two other presented an AR , the survival rate was 100%. The compliance in terms of CoV% decreased from 50% the year before to 27% the year after the transfer.

CONCLUSION: Few patients have been transferred with a functional graft from our pediatric hospital to the main transplantation center in Brussels. For these patients, results are encouraging in terms of AR and lost of graft. Average age at transfer was higher than european standards. The decrease of compliance remains a key problem in the years immediately following the transfer, hence the necessity to have a specific program and to start it timely.

ABSTRACT NUMBER 37

Expanding orphan disease registries recruitment beyond academic hospitals without diluting experience.

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BACKGROUND: A rare disease registry is intended to collect relevant medical data from disseminated patients with a low-prevalent condition, to increase medical community knowledge and to promote expertise to the benefit of patients. For orphan drugs, longitudinal registry data are requested as alternative for phase III-IV studies performed with conventional drugs. Added value is to deliver epidemiologic data (incidence, prevalence) in a defined territory. Today, only a limited number of academic centres have been addressed to enrol patients into rare disease registries.

However, the reality of patient management, especially in adults, is multicentric and shared between academic and non-academic hospitals according to the disease course and this may enter in conflict with the objectives of a registry. Not all patients - and certainly not during their whole disease course - are followed in academic institutions. As a consequence, the recruitment of the registry may be incomplete, biased or delayed. Moreover, the active participation and interest of non-academic specialised physicians is necessary to ensure early diagnosis of patients with a rare condition.

METHODS: We considered the hurdles and possible solutions to address these issues in the setting of the Belgian section of the world registry of patients with atypical Haemolytic Uraemic Syndrome (aHUS) (NCT01522183, sponsored by Alexion Pharmaceuticals, Inc.).

RESULTS:

Hurdles

1) To date, most of the specialised physicians practicing in non-academic hospitals are not participating investigators of the aHUS Registry and do not have access to the electronic data capture system.
2) Indefinitely increasing the numbers of participating centres without consequent numbers of patients may increase the rate of errors (double entries), the costs (opening a centre, initiation and study monitoring), is time-consuming (training to using database) and may dilute clinical experience.
3) Patients and physicians may be reluctant to dedicate time and energy to ensure central site registration and/or follow-up, in absence of enough incentive.

Proposals to increase registration-rate

We propose to include patients followed in general hospitals via a reference centre by means of:

1) Creation of a Belgium study-group / network.
2) Optimisation of registry quality by centralisation of data-input expertise (local in limited centres and / or with travelling CRA).
3) As often as necessary, patient visits would be held in the referring institution and data would be transferred by the investigator or his delegate to the referral institution via a secured mean. Any financial compensation must account for both site contributions.
4) The approach must be validated by the leading ethical committee (EC) as well as both ECs of referring and referral centres, and the mode of data transfer must respect privacy commission rules.

CONCLUSION: Formalised collaborations may allow expanding recruitment of rare disease-patients beyond academic hospitals without dissipating resources or loosing expertise.