17th Budapest Nephrology School
26 – 31 August, 2010

TEST

AGE:
GENDER:
COUNTRY:

1) Which of the followings are true?
1. Hypoadiponectinemia can predispose to hypertension?
2. Hyperadiponectinemia can predispose to diabetic nephropathy?
3. Hypoadiponectinemia is related to organ complications in patients with essential hypertension?
4. Hyperadiponectinemia is related to insulin resistance in obese subjects?

a) true are: 1, 2, 3, 4
b) true are: 1, 3
c) true are: 3, 4
d) true are: 1, 4
e) true are: 1, 3, 4

2) 24 year old Caucasian female presents for evaluation of recent onset severe hypertension. She has no significant past medical history and is not taking any medications. Denies taking any NSAIDS or over the counter medications. Her BP was noted to be elevated at her dental check up. Her BP was normal when checked 1 year previously. Both parents are healthy and normotensive. On examination she appears well. BP = 166/96 mm Hg in right arm with regular adult sized cuff. Heart rate is 82 per minute. Cardiac exam is normal. No pedal edema present. Abdominal exam is benign but there is an epigastric bruit present. Rest of examination is benign. CBC, creatinine and electrolytes are normal. EKG shows normal sinus rhythm. You suspect that the patient may have renal artery stenosis due to fibromuscular dysplasia (FMD). The most accurate test to diagnose FMD is:

a) Captopril renal scan
b) MR angiogram
c) Duplex Doppler of the renal arteries
d) CT Angiogram
e) Renal angiogram

3) Indicate the most important factor in the regulation of PTH secretion

a) serum phosphate concentration
b) serum FGF23 concentration
c) serum total calcium concentration
d) serum ionized calcium concentration
e) serum active VitD concentration

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4) The calcium balance in patients with CKD 3/4 is (indicate the correct answer(s))

a) strongly positive
b) is negative provided the patient is not treated with active VitD
c) is negative even when treated with adequate doses of active Vit D
d) patients have hypercalciuria
e) patients have hypophosphaturia

5) FGF23 (indicate the correct answer(s))

a) is secreted by the liver in case of hyperphosphatemia
b) is secreted by osteocytes in response to increased serum phosphate concentrations
c) is decreasing the phosphaturia in CKD 3/4 patients
d) is stimulating the synthesis of Vit D in the proximal tubular cells
e) is an indicator of the negative phosphate balance in CKD 3/4 patients

6) For which patient would you indicate plasma exchange?

a) Goodpasture´s syndrome, dialysis dependency for one month, no alveolar hemorrhage.
b) SLE, membranous lupus nephritis, anti-cardiolipin antibody positivity, livedo reticularis, Raynaud symptoms, no thrombotic event.
c) Wegener´s granulomatosis, recent dialysis dependency, no alveolar hemorrhage.
d) Adult patient with Henoch-Schönlein purpura, diffuse mesangial proliferative glomerulonephritis with IgA deposits, crescents in 25 % of glomeruli, nephrotic range proteinuria, GFR 60 ml/min, not yet on immunosuppressants.

7) Cryoglobulinemia can be associated with the following histologies (more than one correct answer)

a) Leukocytoclastic vasculitis
b) Minimal change disease
c) Membranoproliferative glomerulonephritis
d) Membranous glomerulonephritis

8) What is the most frequent reason why ABD becomes predominant bone disease today

a) Elderly patients entering dialysis
b) Diabetic patients entering dialysis
c) Calcium based binder treatment
d) Dialysis calcium concentration of 1.75 mmol/l

9) According to the KDIGO guidelines calcium based binders should be restricted in patients with (3 correct answers)

a) Bone fractures
b) Vascular calcifications
c) Cardiovascular diseases
d) Dialysis calcium concentration of 1.75 mmol/l
e) Persistently low PTH
f) Hypercalcemia

10) In treatment of ABD we should

a) Decrease daily calcium based binder intake
b) Allow mild phosphate increase
c) Use low calcium dialysate (1.25 mmol/l)
d) Stop with vitamin D use
e) All of the above

11) A 48-year-old female who has been on hemodialysis for 18 months underwent a deceased donor kidney transplant 9 months ago. She has history of end-stage renal disease due to lithium toxicity. Her immunosuppressive regimen consists of tacrolimus (6 mg twice a day), mycophenolate mofetil (500 mg twice a day), and prednisone (5 mg once a day). Her serum creatinine has been stable around 0.9 mg/dl. She developed BK viremia at 5.6 log copies per ml (386,000 copies per ml).
Which one of the following would you recommend initially?

a) Stop mycophenolate mofetil and start azathioprine
b) Stop tacrolimus and start cyclosporine
c) Stop prednisone and start rapamycin
d) Stop mycophenolate mofetil
e) Stop tacrolimus and start tetracycline

12) A 41-year-old woman with history of systemic lupus erythematosus who underwent kidney transplantation 4 years ago is in your office due to leg edema. Laboratory studies show a serum creatinine of 2.1 mg/dl, tacrolimus level of 5.2, and a random urine protein/creatinine ratio of 3.6. Her blood pressure is 140/90 mmHg on amlodipine and labetalol. She is on tacrolimus, mycophenolate mofetil and prednisone for immunosuppression.
Which one of the following would you recommend?

a) No further work-up needed
b) Change amlodipine to diltiazem
c) Schedule an ultrasound-guided kidney biopsy
d) Add spironolactone
e) Change mycophenolate mofetil to azathioprine

13) A 36 -year-old male with history of ESRD and HIV is in your office for kidney transplant evaluation. His 26-year-old sister would like to be tested for donation.
Which one of the following would be a correct statement?

a) Kidney transplant is contraindicated in patients with history of HIV
b) He could be transplanted if his HIV viral load is undetectable
c) There is no increased risk of rejection in patients with HIV
d) He does not need to be on highly active antiretroviral therapy
e) Living donor transplantation is contraindicated in patients with HIV

14) The survival advantage of PD is the biggest for patients

a) who are younger than 60 years old, and have no comorbidities
b) who are older than 60 years old, and have no comorbidities
c) who are younger than 60 years old, and have cardiovascular comorbidities
d) who are younger than 60 years old, and have diabetes

15) Which of the followings help to preserve residual renal function?

a) Commencing PD instead of HD
b) Giving ACE inhibitor therapy
c) Giving furosemide to maintain urine output
d) Avoid peritonitis

16) mTOR inhibitors block Signal 3 and thus inhibit cell division.

a) True
b) False

17) Which biologic is NOT lymphocyte cytotoxic

a) ATGAM
b) thymoglobulin
c) OKT3
d) campath

18) Adhesion molecule binding to its receptor is not necessary to initiate lymphocyte activation.

a) True
b) False

19) Clinical correlation of chronic rejection.
The true statements should be indicated.

a) Major cause of graft loss after 1 years
b) Insidious, progressive decline in the GFR
c) Frequently accompanied by proteinuria and hypertension
d) Reversible

20) Biopsy features of acute T-cell-mediated rejection include
The true statements should be indicated.

a) interstitial inflammation (predominance of CD8 lymphocytes)
b) tubulitis
c) ± lymphocytic arteritis
d) hyaline arteriolopathy

21) Features of chronic calcineurin inhibitor toxicity include
The true statements should be indicated.

a) hyperplasia of podocytes
b) striped fibrosis and tubular atrophy
c) peripheral nodular hyaline deposits in arterioles (hyaline arteriolopathy)
d) diffuse-global glomerulosclerosis

22) Based on results of epidemiological studies what is the approximate improvement in the relative risk of mortality in patients treated with active vitamin D compared to patients not receiving such treatment?

a) 10%
b) 20%
c) 30%
d) 40%

23) What is the indication for a simultaneous pancreas-kidney transplantation?

a) Type 1 diabetes with uremia
b) Diabetes with uremia
c) Type 1 diabetes
d) Type 2 diabetes

24) Which is the most important target in patient education?

a) The patient's knowledge
b) The patient's motivation
c) The patient's behaviour.

25) Which proportion of the actual treatment for patients with reduced kidney function is carried out by the patients themselves through self-management?

a) About 25%
b) Around 50%
c) More than 90%.

26) Which of the following statements are true regarding the TREAT study?

a) The study demonstrated an increased risk of death in patients with Hb target 13 g/dL
b) The incidence of stroke was higher in the darbepoetin alfa group.
c) The risk of cardiovascular events, especially congestive heart failure, increased in the placebo group
d) The transfusion requirements was reduced by approximately 50 % in the darbepoetin alfa group
e) Patients in the darbepoetin alfa group with a history of malignant disease had a higher risk of death from cancer.

27) Which of the following statements is correct?

a) Aldosterone causes target organ damage of heart and kidney by elevating blood pressure
b) Aldosterone causes target organ damage of heart and kidney if the patient has metabolic alkalosis.
c) Aldosterone may cause target organ damage of heart and kidney even in the absence of hypertension if salt intake is high.

28) The administration of the mineralocorticoid receptor antagonist spironolactone in patients with proteinuria.

a) Is contraindicated because of the risk of hyperkalemia.
b) Causes orthostatic hypotension.
c) Reduces protein excretion in individuals with the "escape phenomenon"

29) Based on new DOPPS data, new onset atrial fibrillation in an 80 year old hemodialysis patient should:

a) Be treated with Coumadin to achieve INR target of 2 – 3
b) Be treated with Coumadin to achieve an INR target of 1-2
c) Be treated with plavix (clopidogrel)
d) Should not be treated with anticoagulation X

30) Idiopathic membranous nephropathy is usually caused by:

a) deposition of preformed circulating immunocomplexes
b) alloimunisation of the mother with fetal podocyte antigens
c) mutations of several podocyte proteins (e.g. TRPC6)
d) antipodocyte antibodies (e.g. anti-PLAR2)
e) circulating autoreactive T cells

31) Outcome of focal segmental glomerulosclerosis is not dependent on:

a) proteinuria at presentation
b) immediate response of proteinuria to ACE inhibitors
c) response to corticosteroid treatment
d) serum creatinine at presentation
e) number of podocytes per glomerulus

32) Which ONE of the following statements concerning the renal replacement therapy of patients with acute kidney injury (AKI) is correct?

a) CRRT is associated with a better survival rate than intermittent hemodialysis.
b) Extended dialysis is associated with a better survival than CRRT.
c) There is no proven survival benefit of any modality of RRT in patients with AKI.
d) CRRT is associated with a better survival rate than extended dialysis.
e) Extended dialysis is associated with a better survival than intermittent hemodialysis but worse than CRRT.

33) Which one of the following statements is correct? In the case of life threatening carbamazepine intoxication the treatment of choice is:

a) Charcoal hemoperfusion
b) Plasmapheresis
c) High-flux hemodialysis
d) Peritoneal dialysis
e) Liver dialysis (MARS or PROMETHEUS)

34) Infected dialysis catheters:

a) Should always be removed
b) Should only be removed if there is a positive blood culture
c) Can be successfully salvaged in about 66% of the cases
d) It is only necessary to remove the dialysis catheter if it is located in the subclavian vein

35) Isotonic saline infusion

1. **contains salt.**
2. **contains sodium.**
3. **contains potassium.**
4. **has a concentration of 9 g NaCl per liter water.**
5. **has a concentration of 4.5 g NaCl per liter water.**

a) 1., 2., 3. are correct.
b) 1., 2., 3., 4. are correct.
c) 1., 2., 3., 5. are correct.
d) 1., 2., 4. are correct.
e) 1., 2., 5. are correct.

36) Acute hyponatremia

a) Leads to water movement out of the cells and to cell shrinkage.
b) Is never dangerous.
c) Leads to water movement into cells and sometimes to life-threatening swelling of cells (for example brain edema).
d) Must not be treated.
e) Is a rare clinical problem.

37) Macrophages

1. **are important for innate immunity**
2. **are important for aquired immunity**
3. **produce VEGF-C and can regulate salt, water, and blood pressure homeostasis.**
4. **regulate lymphangiogenesis and tumor growth.**
5. **are red blood cells.**

a) Only 1. and 2. are correct.
b) 1., 2., 3., and 4. are correct.
c) 3., 4., and 5 are NOT correct.
d) Only 3. is not correct.
e) All answers are correct.

38) Refractory hypertension

1. **is characterized by persisting hypertension despite multiple anti-hypertensive drug treatment (> 3 – 4 different antihypertensive drugs).**
2. **cannot be treated by dietary salt restriction.**
3. **can be treated by dietary salt restriction.**
4. **in recent studies, dietary salt restriction lowered systolic blood pressure by ≈ 20 mmHg in patients with refractory hypertension.**
5. **leads to cardiovascular disease.**

a) All statements are correct.
b) No statement is correct.
c) 2. is correct.
d) 1., 3., 4., and 5. are correct.
e) Only 1. and 5. are correct.

CULTURAL QUESTIONS

Which is true?

a) S. Korányi was the first who coined the world: „Renal Insufficiency”.
b) S. Korányi was the first who measured the osmotic concentration of urine and plasma and compared them.
c) St. Stephen told: “The one language country is very week. Invite foreigners, make them settled down; their knowledge increases your power.”.
d) BNS is the best refreshing course on nephrology.
e) The Hungarian Hospitality is special.

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