MEDICAL UNIVERSITY - PLEVEN
FACULTY OF MEDICINE

DISTANCE LEARNING CENTRE

DEPARTMENT OF "NEPHROLOGY, HEMATOLOGY AND GASTROENTEROLOGY"

PRACTICAL EXERCISES – THESES

FOR E- LEARNING IN NEPHROLOGY

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CHRONIC GLOMERULONEPHRITIS

A/ Introduction

Chronic glomerulonephritis is a multifarious group of diseases, with a vague etiology, similar pathogenesis, and identical, but symptoms shown to a different extent. It is not much known about etiology, but role of bacteria, viruses or immunoallergic conflict is discussed.

Pathogenesis:

Two pathogenic mechanisms are possible:

1/ Immunocompex

2/ Antibasementmembraneous.

Classification:

The histological classifications are of different types. In our clinic we use most often the following classification:

1. Idiopathic nephrotic syndrome.
    a. Minimal change glomerulonephritis.
    b. Mesangial proliferative glomerulonephritis with IgM deposits.
    c. Focal segmental glomerulosclerosis.
2. Membranous glomerulonephritis.
3. Mesangialproliferative glomerulonephritis.
4. Membranoproliferative glomerulonephritis.

These types are determined by light, electronic, and immunofluorescent microscopy. It is important for determining treatment and prognosis of disease.

Morphology:

Macroscopically the kidneys are normal and symmetric in size and their surface is fine granular. During the process of kidney cutting the pyramids are well visible.
With different microscopes, we can see the type of the chronic glomerulonephritis.
The main changes are found in or close to glomerular membrane, in the mesangial space or both. Immunofluorescent microscopy has a significant importance for the diagnosis, because it shows the types of deposits. Some specimens contain focal sclerotic lesions, and these may have some value in predicting outcome. If deposits are granulated, the mechanism of pathogenesis is immunocomplex one; if they are linear, the mechanism is autoimmune one.

B/ Students' work with patients.

C/ Discussion of the case.

Diagnosis:

During the course of nephrology, students should be able to recognize at least two principal diagnoses - glomerulonephritis and pyelonephritis.

1/Anamnesis:

Glomerulonephritis often affects young men, although there is no a specific age. High blood pressure and oedema are typical for the patients. Anaemia is not a specific symptom and its existence means that there is hard sclerosis of interstitium. Often such patients have been treated for a long time for hypertension, without the nature of disease to be known.

2/ Physical examination:

The assistant shows to your students the correct manner of physical examination.

3/ Lab studies:

The laboratory tests that should be performed are proteinogram, urine analysis and functional examinations. The proteinogram is much interesting particularly, if there is a nephrotic syndrome. In these cases decreasing of albumin and the increase of globulins is present. The following is typical for this syndrome:

1/ Hypo- and dysproteinaemia

2/ Proteinuria > 3,5g for a day

3/ Hyperlipidemia

4/ Edema of nephrotic range.

Hematuria - Almost all patients have hematuria, often such as erythrocyturia, seldom such as gross hematuria- macroscopic.

Functional analysis - Glomerular filtration rate reduces parallel with the development of the disease. This is demonstrated with the clearance of creatinine. When it is decreased under 80 ml/min., chronic renal failure has developed.

Immunology - an immunological investigation has a large practical importance. Due to its help we find other diseases such as neoplasms' or overlap syndromes, where there is a kidney injure.

4/ Imaging studies:

Ultrasonography shows a normal or slightly decreased kidney size. Well visible are the renal pyramids. Typical to this disease are symmetrical changes.

They are typical as well for radionuclide nephrography and X-ray urography.

The principal examination of chronic glomerulonephritis is renal biopsy, by means of which we may indicate the histologic type and do prognosis. Recently, contraindications on this examination and its realization are getting easier for a work.

D/ Debate for methods of a therapy.

Treatment.

Medical care: The treatment of these patients should be taken in a hospital. The regimen on bed makes better supplement with blood perfusion of the kidneys. It often decreases the blood pressure and tumefactions.

Medication: It is possible to begin the treatment with symptomatic medicaments after biopsy or it may be done only with patients, having contradictions for an immunosuppressive therapy. The alone symptomatic treatment is for the patients, who have:

1/ Oligosymptomatic progress of disease

2/ Pregnant women

3/ Contradictions for pathogenetic treatment

4/The patients, who refuse pathogenic treatment.

Symptomatic treatment includes diuretics, antihypertensive drugs, antiagregants, human albumin, vitamins, etc.

Diuretics: Most popular are the loop-diuretics. They are used especially in cases with nephrotic syndrome, but almost all patients take them. The dose of Furosemid /Furanthril/ is 40-80mg two, three, or four times a day. They reduce blood pressure and the weight. *Antihypertensive drugs:* Inhibitors of angiotensin converting enzyme as Captopril, Enalapril maleas or other drugs are quite popular for these diseases, because they decrease the loss of proteins and normalize the blood pressure.

Blockers of calcium canals dilate afferent vessel, in that way make better prognosis. We can use Nifedipine- 10 mg three or four times a day, or it is modern and a good effect is reached by slow - Nifedipine, as Corinfar R – 20 mg one-two times a day.

Antiagregants: As antiagregant better effect has Aspirin, which consists of acetyl-salicylic acid. A small dose is recommended for use, because there is a better effect upon prostaglandins. We prefer it to be in a dose of 125-250 mg a day.

PATHOGENIC THERAPY is basic in treatment of chronic glomerulonephritis.

Corticosteroids: The main drugs are corticosteroids. We use more often Prednisolon and Methylprednisolon. There are three methods for their using:

1/ conventional method

2/ "pulse" therapy

3/ both methods.

Immunosupresors: Other medicaments for pathogenic therapy are immunosuppressive one. We use Cyclophosphamid /Endoxan/ or Immuran.

Anticoagulants: During 60th the treatment of chronic glomerulonephritis has began by means of anticoagulants as Heparin. These kinds of glomerulonephritis that has precipitation of fibrin in glomeruli examined as local DIC-syndrome. Heparin is used in a dose of 5000 U each 6 or 8 hours a day during one month. After then, we continue with indirect anticoagulants, as Syntrom, Varfarin, etc.

Plasmapheresis.