

**ENDOGENOUS INTOXICATION IN CHILDREN WITH CHRONIC PYELONEPHRITIS**N.I. AKHMEDJANOVA, F.M. HAMIDOVA, R.R. MURADOVA, R.M. NURALIYEVA,  
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**СУРУНКАЛИ ПИЕЛОНЕФРИТ БЎЛГАН БОЛАЛАРДА ЭНДОГЕН ИНТОКСИКАЦИЯ**Н.И. АХМЕДЖАНОВА, Ф.М. ХАМИДОВА, Р.Р. МУРАДОВА, Р.М. НУРАЛИЕВА,  
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**ЭНДОГЕННАЯ ИНТОКСИКАЦИЯ У ДЕТЕЙ С ХРОНИЧЕСКИМ ПИЕЛОНЕФРИТОМ**Н.И. АХМЕДЖАНОВА, Ф.М. ХАМИДОВА, Р.Р. МУРАДОВА, Р.М. НУРАЛИЕВА,  
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Дисметаболическая нефропатия (ДН) ва унинг муҳитида ривожланган болалар сурункали пиелонефритини ўрганиш педиатрия ва болалар нефрологиясида долзарб ҳисобланади. Ишнинг мақсади: Эндоген интоксикацияни (ЭИ) диагностик информацион комплексини аниклаш 4 ёшдан 14 ёшгача бўлган 55 нафар болалар ўрганиб чиқилди, шулардан 30 нафари соғлом ва 25 нафари ДН муҳитида ривожланган оксалатли-кальцийли кристаллуриянинг авж олиши билан. Текширувлар натижасида буйраклар функционал кўрсаткичларининг пасайиши, яъни: оксалурининг кўпайиши, шунинг билан бирга умумий альбуминнинг пасайиши ва ўртача ўлчамли молекулалар, С-РБ даражасининг кўпайиши аникланди.

**Калит сўзлар:** *иккиламчи сурункали пиелонефрит, эндоген интоксикация, ўртача ўлчамли молекулалар, альбумин.*

Dysmetabolic nephropathy (DM) and matured on its phone secondary pyelonephritis in children are highly actual in Pediatrics and children nephrology. The aim of the work: To identify diagnostic informative complex of indication Endogenous intoxication (EI). It were examined 55 children in age from 4 till 14 years, 30 absolute healthy and 25 with Chronic Pyelonephritis on the phone of Dysmetabolic Nephropathy with oxalate-calcium crystalluria in the stage exacerbation disease. It was established reliable decreasing of indications kidney function, and increasing oxaluria, and also reducing general albumin and increasing the level of medium molcul, M-RP. Assessment results of research in functional state of kidneys and the medium level of molcul in blood plasm in children with Chronic Pyelonephritis showed diagnostical significance to identify MM, as diagnostic method of EI.

**Key words:** *secondary chronic pyelonephritis, endogenous intoxication, medium molecules, albumin.*

**Introduction.** In patients with secondary pyelonephritis saved highly risk of development chronic kidney disease (Chr.KD) with formal chronic renal failure (Chr.RF) and decreasing the quality of life already in childhood. [1,5]. The most common dysmetabolic nephropathy in the structure is oxalate crystalluria, which fall on 68-71%, 15% fall on lithate [3,4].

Under DN increase a large group of nephropathy with variety etiology and pathogenesis, developing in consequence disturbances of metabolism. The problem of dysmetabolic nephropathy (DN) and developed on their phone secondary pyelonephritis in children are greatly actual in Pediatrics and children nephrology [3,4,5]. Pathology of exchange leads to changing functional state of kidneys (FSK) or to structural displacement on different level of nephron elements.

From the beginning of birth age DN progress right of way till child development in children

with urinestone disease, interstitial nephritis, chronic pyelonephritis (Chr.P), renal failure [26].

Stratification microbe-inflammation process in children with DN as a rule leads to impairment filtration of kidney function [3,5].

Endogenous intoxication (EI) is a Polyetiological Syndrom, characterized accumulation of tissues and biological fluids of endogenous intoxication substance, represent their excess products normal and perversely metabolism or cellular reaction. This is difficult polyorganic pathological state, including disturbances mechanisms transporting toxic substance in organs, their transformation and excretion, disturbances of biotransform toxins ability [1]. The markers of EI are the level of medium molcul (MM), albumins, medium-reactive protein (MRP). Accumulation of MM maintain current of pathological process, acquire role of secondary toxins, which influence on vital activity in all systems and organs [7].

**Set of problem.** The aim of the work: To determine diagnostic informative complex of indicators EI in children with chronic pyelonephritis on the phone of metabolic disturbances.

Materials and methods of research: 55 children were examined at the ages of 4-14, 30 absolutely healthy, 25 - with Chr.P. on the phone of DN in children with oxalate-calcium crystalluria in the stage of exacerbation.

Glomerular filtration of kidney s detected on clearance endogenous creatinin (Van Slayke), creatinin in blood and urine – on summarily containing chromogens, based on reaction JFFE (E.D. Ponomarova with authors. 1969).

Osmolarity of urine determined in algoscopic method on apparatus OMK-1, TH-01. A numeral identification oxalates in urine carried out on N.V.Dmitreyov. (1996). Daily amount of excretion oxalates carried out in the following formulas:

Amount of permanganate potassium  $(KMgO_4) \times 0,63 - 0,1 \times D / 2 = \text{mg daily oxalate}$ , where: 0,63-permanent coefficient; D-diuresis.

Identification of molcul medium mass carried out on the method of I.I. Jadenova (2002y), M-RP on the method of latex immunonephelometry in analizator BN-ProSpec; total protein in the blood determined azometerical: accoding to the classical method of Keldalya (1883) and his modifications; total albumin measured in fluorescental method by (Miller Yu.A., Dobresov G.E. 1992).

Mathematical manipulation of receiving results carried out with the help of computer in statistic Programm Excel.

**Results.** External clinic sign of EI in children with Chr.P. on the phone of DN with oxalate-calcium crystalluria (includes general fatigue, loss of appetite, somnolence, sleep disorders, pain in the area of lumbar) were not permanent and poor expressed.

Sufficient informative in diagnostic plan showed indications in practical function of kidney. It was established reliable decreasing RGF (the rate of glomerular filtration) ( $P < 0,05$ ) (table), in sick children with the comparisons healthy one.

Notes: R-reliability differences between indications of healthy and chronic pyelonephritis in children.

Urine Osmolarity was statistical reliable reducing ( $P < 0,001$ ). Oxaluria in average consists of  $42,9 \pm 2,67$  mg/daily, that was reliable higher than healthy one ( $P < 0,001$ ).

During investigation the indication of EI detected increasing the level of MM in children with Chr.P. till treatment  $0,270 \pm 0,004$  average conventional units in norm  $0,135 \pm 0,001$  conventional units in healthy one. It was establishment reliable ( $P < 0,001$ ) reducing contain of total albumin plasm of blood till  $31 \pm 3,3$  g/l in sick children with Chr.P.

The level of M-RP under consideration is the most sensitive laboratory marker infections, inflammation and tissue damage, was reliable increased till  $16 \pm 4,4$  mg/l in blood plasm of children with Chr.P. in comparisons with the indications of healthy children. ( $P < 0,001$ ). Detected disorders allowed to make conclusions.

Table

The indications of kidney function and Endogenous Intoxication in children with Chronic Pyelonephritis. (M+m)

Indications	Healthy children (n=30)	Chr.P (n=25)
I. Kidney function: RGF, ml/min.m2	98,6±7,8	69,11±1,16 $P < 0,05$
Urine Osmolarity, mosm/l	1000±200	610,46±20,05 $P < 0,001$
Daily diuresis, l/daily	1,7±0,036	1,06±0,028 $P < 0,001$
Oxaluria, mg/daily	25±2,4	42,9±2,67 $P < 0,001$
II. Endogenous intoxication: Protein of plasm, g/l	68,4±4,1	57±3,2 $P < 0,001$
Total albumin of plasm, g/l	40,2±2,1	31±3,3 $P < 0,001$
Medium molecules conventional units	0,135±0,001	0,270±0,004 $P < 0,001$
M-reactive protein mg/l	5±4,1	16±4,4 $P < 0,001$

### Conclusions:

1. In the period exacerbation of Chr.P. is marked reducing MGF, urine osmolarity and increasing oxaluria.
2. During the exacerbation of Chr.P. in children the indication of EI characterized significant reducing of total albumin of blood plasm and increasing the level of MM and M-RP in blood plasm.

Received results improve diagnostic significant of research indications of EI, that permit to advice its, including for estimation detoxication procedures.

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### ЭНДОГЕННАЯ ИНТОКСИКАЦИЯ У ДЕТЕЙ С ХРОНИЧЕСКИМ ПИЕЛОНЕФРИТОМ

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Дисметаболическая нефропатия (ДН) и развившийся на её фоне вторичный пиелонефрит у детей является весьма актуальной в педиатрии и детской нефрологии. Цель работы: определение диагностически информативного комплекса показателей эндогенной интоксикации (ЭИ). Обследовано 55 детей в возрасте от 4 до 14 лет, 30 практически здоровых и 25 с ХП на фоне ДН с оксалатно-кальциевой кристаллурией в стадии обострения заболевания. Установлено достоверное снижение показателей функции почек, повышение оксалурии, а также снижение общего альбумина и повышение уровня средних молекул, С-РБ. Оценка результатов исследования функционального состояния почек и уровня средних молекул в плазме крови у больных ХП показала диагностическую значимость определения СМ, как метода диагностики ЭИ.

**Ключевые слова:** вторичный хронический пиелонефрит, эндогенная интоксикация, средние молекулы, альбумин.