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INFLUENCE OF THE STATE OF METABOLISM OF THE MATERNAL ORGANISM ON THE FORMATION OF NEPHROPATHIES IN NEWBORNS

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Abstract: The authors studied the effect of the state of metabolism of the maternal organism on the formation of nephropathies in newborns. A shift in the biochemical parameters of the blood of pregnant women after childbirth was established, which contributed to the formation of DMN in newborns.

Keywords: newborns, dysmetabolic nephropathy,Introduction.

Dysmetabolic nephropathy (DN) is a group of diseases with various etiologies and pathogenesis characterized by an interstitial process with damage to the renal tubules due to metabolic disorders. It is often characterized by a subclinical, low-symptomatic course and polymorphism, which makes early diagnosis difficult. As DN progresses, it leads to the formation of tubulointerstitial nephritis, urolithiasis, and also contributes to the attachment of secondary infection and the development of pyelonephritis.

Currently, there is a shift in the peak incidence of metabolic nephropathies towards an earlier age. Therefore, the question of predisposing factors, the action of which leads to the development of this condition in this age group, is relevant.

Cystatin C is a marker of the preclinical phase of renal pathology. One of the most important diagnostic values of cystatin C is that it allows quantifying the gradient of renal function in individuals who do not fall within the generally accepted criteria of "clinical renal pathologies".

The purpose of the study: To study the effect of the state of metabolism of the maternal organism on the formation of nephropathies in newborns

Materials and methods:

The object of the study was 212 newborns. The analysis of children by gender, parity and place of residence showed a predominance of boys (n=212, 52.7± 0.4%) than girls (n=212, 47.2± 0.4%). The analysis of the place of residence showed the predominance of children living in rural areas (52.5 ± 0.2%).

The results of the study:

Taking into account the risk factors and the comorbid state of the mother, as well as their impact on the health of the newborn, a comparative analysis of the biochemical parameters of the mother's blood during pregnancy (during the last trimester), 7 days after delivery was carried out

(Table 1)

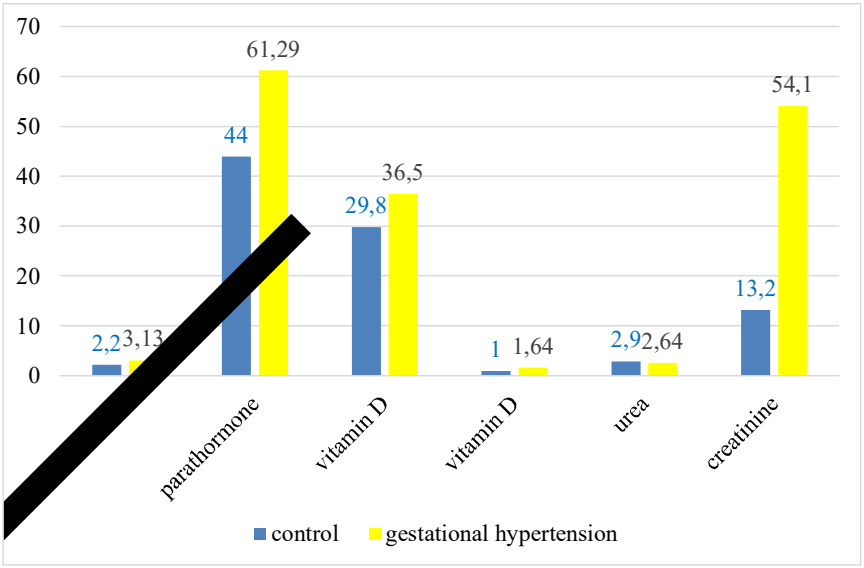
Table.1.

Comparative analysis of biochemical parameters of blood during pregnancy

Indicators	1-group (control)	2- group (with gestational hypertension)
Calcium (mmol/L)	2,2±0,3	3,13±0,8
Parathyroid hormone (pg/ml)	44,0±1,2	61,29±8,5*
Vitamin B3 (25ON) (ng/ml)	29,8±1,2	36,5±3,1*
With cystatin	1,0±0,02	1,64±0,07*
Urea (mmol/l)	2,9±0,1	2,64±0,12
Creatinine (mmol/l)	13,2±1,8	54,1±1,97***

Note: * - the differences are relative to the data of the 1st group
(* - P<0,05, ** - P<0,01, *** - P<0,001)

The table shows the results of biochemical analysis of the blood of women with the physiological course of pregnancy and against the background of GH. There was a significant increase in the level of parathyroid hormone, vitamin D, cystatin C and creatinine compared to these indicators of the control group (P<0,05- P<0,001)



Drawing. 1. Biochemical blood parameters in pregnant women

Pregnant women showed an increase in the level of parathyroid hormone by 1.39 times (P<0.05), vitamin D by 1.22 times (P<0.05), creatinine by 4.10 times (P<0.001) compared to the indicators of the control group (Fig. 1). All identified shifts indicate a violation of the metabolism of calcium and uric acid, and show the importance of taking into account this condition in pregnant women and women in labor, which undoubtedly affects the health of the fetus and child.

Analysis of the studied blood parameters in mothers, in dynamics after childbirth showed a decrease in calcium and parathyroid hormone, an increase in vitamin D and urea levels. The results obtained have statistical significance within P<0.05, (tabel.2)

Table 2.

Comparative analysis of biochemical blood parameters in women before and after childbirth

Indicators	Mothers	
	1-group (pregnant women with GG)	2-group (women in labor with GG)
Calcium (mmol/L)	3,13±0,8	1,8±0,1
Parathyroid hormone (pg/ml)	61,29±8,5	24,2±1,5*
Vitamin B3 (25ON) (ng/ml)	36,5±3,1	60,7±4,7*
With cystatin	1,64±0,07	1,78±0,06
Urea (mmol/l)	2,64±0,12	4,045±0,11*
Creatinine (mmol/l)	54,1±1,97	55,1±2,17

Note: * - the differences are relative to the data of the 1st group
(* - P<0,05, ** - P<0,01, *** - P<0,001)

As a result, there was a tendency to decrease the level of calcium in the mother's blood, as well as a significant decrease in parathyroid hormone after childbirth by 2.5 times - up to 24.2±1.5 pg/ml (P <0.05).

At the same time, the level of vitamin D increases by 1.6 times- up to 60.7±4.7 ng/ml, urea by 1.5 times-up to 4,045±0.11 mmol/l against the indicators of pregnant women with GH (P<0.05).

Indicators of cystatin and creatinine were at the level of indicators of pregnant women, in the range of 1.78±0.06 and 55.1±2.17 mmol/l, respectively, in relation to group 1 data: 1.64±0.07 and 54.1±1.97 mmol/l, respectively.

Conclusion:

Consequently, the obtained test results show a clear shift in the studied biochemical parameters of the blood of pregnant women after childbirth, which is manifested by a deficiency of calcium, a decrease in the level of parathyroid hormone against the background of hypervitaminosis D and a violation of protein metabolism with a shift towards acidosis. Transient changes in the biochemical parameters of women's blood, depending on the conditions and type of nutrition of the mother, can contribute to the formation of DMN in newborns.

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