

## CHANGES OF CALCIFICATION GRADIENTS DEPENDING ON FETUIN-A LEVEL IN CHRONIC KIDNEY DISEASE

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The kidneys play a crucial role in maintaining calcium and phosphorus balance. Renal failure can disrupt all aspects of calcium-phosphorus metabolism, leading to increased secretion of parathyroid hormone (PTH) by the parathyroid gland.

### **The purpose of the study.**

Analysis of clinical-laboratory changes of calcium-phosphorus imbalance in relation to serum fetuin-A level in chronic kidney disease (CKD) patients.

**Material and methods.** 103 patients with CKD in the conservative and pre-dialysis stages treated at the nephrology department of the National Medical Center were selected for the study. All patients included in the study had their serum fetuin-A levels determined, and based on their values, they were divided into two groups (N 27.31 - 205.98 ng/mL), i.e. those with a fetuin-A level below the norm (n-76, Fetuin-A -  $15.11 \pm 5.41$ ) and those with a fetuin-A level within the norm (n-27, Fetuin-A -  $57.8 \pm 6.48$ ). Laboratory changes in calcification processes (calcium, phosphorus, vitamin D, PTH) were analyzed in the study groups. Натижалар ва уларни муҳокамаси.

According to the results, calcium fetuin-A in the normal group averaged  $1.99 \pm 0.08$  mmol/l. and it was found to change unreliably ( $r > 0.05$ ) compared to the control group, and in the group with fetuin-A below the norm, calcium averaged  $1.87 \pm 0.07$  mmol/l, and it was observed to decrease reliably ( $r < 0.01$ ) compared to the control group. When the main groups were compared, it was shown that the value of hypocalcemia did not change reliably ( $r > 0.05$ ) in the group with fetuin-A level below the norm compared to the group with normal fetuin-A level. Hyperphosphatemia showed a similar picture. In particular, the amount of phosphorus in the blood is  $1.42 \pm 0.08$  mmol/l in the group with normal fetuin-A. and it changed unreliably ( $r > 0.05$ ) compared to the control group, and in the group with fetuin-A below the norm, it was observed that phosphorus was  $1.65 \pm 0.09$  mmol/l, and it exceeded reliably ( $r < 0.001$ ) compared to the control group. When the main groups were compared, it was found that the phosphorus value changed unreliably ( $r > 0.05$ ) in the group with fetuin-A below the norm compared to the group with normal fetuin-A level. PTH fetuin-A in the normal group averaged  $68.6 \pm 4.09$  pg/ml, which was reliably increased ( $r < 0.01$ )

compared to the control group, while PTG in the blood serum of fetuin-A group patients was  $79.5 \pm 3.18$  pg/ml, which was reliably increased compared to the control group ( $r < 0.001$ ). it happened. When the main groups were compared, it was found that the PTG value was significantly ( $r < 0.05$ ) higher in the group with fetuin-A than in the group with normal fetuin-A level. Vitamin D (25(OH)D) in the group with normal fetuin-A was  $24.3 \pm 3.17$  ng/ml, which was significantly ( $p < 0.01$ ) lower than the control group, while in the group with low fetuin-A, the level of 25(OH)D decreased by  $13.9 \pm 2.16$  ng/ml, which was significantly ( $p < 0.001$ ) lower than the control group. When the main groups were compared, the group with low fetuin-A showed significantly ( $p < 0.01$ ) lower vitamin D values compared to the group with normal fetuin-A levels.

### Conclusion

1. In chronic kidney disease, calcium-phosphorus metabolism is disrupted, which is manifested by a decrease in calcium and vitamin D in the blood, an increase in phosphorus and parathyroid hormone.
2. These processes change depending on the level of fetuin-A in the blood, that is, when this biomarker decreases, calcification processes become more pronounced and intensify.

### List of used literature:

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