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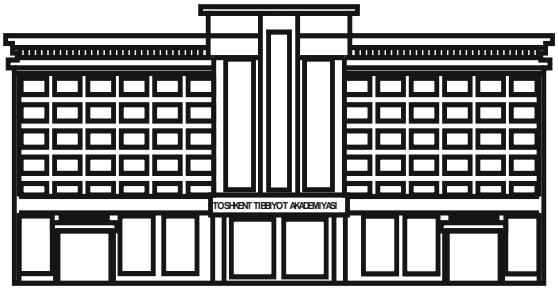

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2 TUR QANDLI DIABET BILAN OG‘RIGAN BEMORLARDA DIABETIK NEFROPATIYA RIVOJLANISHIDA KLOTHO OMILINING AHAMIYATI

Sadikova N.G., Miraxmedova X.T., Botirova N.A.

ВАЖНОСТЬ ФАКТОРА КЛОТО В РАЗВИТИИ ДИАБЕТИЧЕСКОЙ НЕФРОПАТИИ У ПАЦИЕНТОВ С ДИАБЕТОМ 2-ГО ТИПА

Садикова Н.Г., Мирахмедова Х.Т., Ботирова Н.А.

THE IMPORTANCE OF THE CLOTHO FACTOR IN THE DEVELOPMENT OF DIABETIC NEPHROPATHY IN PATIENTS WITH TYPE 2 DIABETES

Sadikova N.G., Miraxmedova X.T., Botirova N.A.

Toshkent tibbiyot akademiyasi

***Цель**: оценка значения фактора Клото в развитии диабетической нефропатии у больных сахарным диабетом 2-го типа. **Материал и методы:** обследованы 33 мужчины и 87 женщин с нормальной или умеренно сниженной функцией почек. **Results:** In patients with diabetic nephropathy in the early stages of chronic kidney disease, klotho factor levels are lower than controls and continue to decline as the glomerular filtration rate decreases. **Conclusions:** The importance of klotho protein in the early diagnosis of chronic kidney disease that developed against the background of diabetic nephropathy has been established.*

***Ключевые слова:** Клото, креатинин, диабетическая нефропатия, сахарный диабет 2-го типа, микроальбуминурия, скорость клубочковой фильтрации.*

***Objective**: To study the importance of klotho factor in the development of diabetic nephropathy in patients with type 2 diabetes. **Material and methods:** 33 men and 87 women with normal or moderately reduced kidney function. **Results:** According to the results of the study, in patients with diabetic nephropathy, in the early stages of chronic kidney disease, the amount of klotho is lower than in the control group, and the amount of Klotho decreases in accordance with the decrease in the rate of glomerular filtration. **Conclusion:** Klotho protein was found to be important in early diagnosis of chronic kidney disease developed against the background of diabetic nephropathy.*

***Key words:** Klotho, creatinine, diabetic nephropathy, type 2 diabetes, microalbuminuria, glomerular filtration rate.*

Qonda mochevina, plazmada kreatinin, koptokchalar filtratsiyasi tezligi (KFT) formulalari, proteinuriya va albuminuriya hozirda diabetik nefropatiyaning mavjudligi va rivojlanishini baholash uchun keng qo‘llaniladigan chora-tadbirlardir [4]. Biroq, bu chora-tadbirlar buyrak to‘qimalarining shikastlanishini aniq, to‘g‘ridan-to‘g‘ri ko‘rsatib bera olmaydi va buyrak faoliyatidagi kichik o‘zgarishlarga nisbatan sezgir emas.

DNning klinik jihatdan rivojlangan bosqichining xabarchisi mikroalbuminuriya bo‘lib, u albuminning siydik bilan chiqarilishining (ASCh) kuniga 30-300 mg oralig‘ida ortishi bilan tavsiflanadi. Odatda siydikda albuminning normal darajasi kuniga 30 mg dan kam. Bu ko‘rsatkich buyraklar faoliyatini baholash va siydikda oqsil mavjudligini aniqlash uchun ishlatiladi. Albumin darajasining oshishi buyraklarning shikastlanishini, shu jumladan diabetik nefropatiyani ko‘rsatishi mumkin. Shuni takidlash kerakki, qandli diabet bilan og‘rigan bemorlarda «yuqori normal» siydik bilan albumin chiqarilishi tashxisi mikroalbuminuriya rivojlanishining prognozidir [5]. Sog‘lom odamlarda ham, diabet bilan og‘rigan bemorlarda ham albumin chiqarilish tezligining kunlik diapazoni 40-45% ni tashkil qiladi .

Uzoq muddatli kuzatuvlarga ko‘ra, mikroalbuminuriya mavjudligi 2 tur diabet bilan og‘rigan bemorlarda yurak-qon tomir kasalliklari va yurak-qon tomir patologiyasidan o‘lim xavfini sezilarli darajada oshiradi [5].

Uzoq muddatli qandli diabet bilan og‘rigan bemorlarda buyrakdagi patologik o‘zgarishlar mikroalbuminuriya boshlanishidan oldinroq yuzaga keladi. Diabetik nefropatiyaning xarakterli yengil mikroskopik belgilari uchta asosiy zararlanishni o‘z ichiga oladi: glomerulyar bazal membranalar (GBM) va naysimon bazal membranalarning qalinlashishi, diffuz mezangial kengayish va afferent va efferent arteriolalarning gialinozi. Shu bilan birga, giperglikemiya sabab kelib chiqqan metabolik va gemodinamik turtki omillari buyrak shikastlanishining vositachilaridir [3]. Hozirgi vaqtga kelib siydikning proteomik tadqiqotlariga qiziqish ortdi. Proteomik tahlil juda o‘ziga xos usul bo‘lib, diabetik nefropatiya tashxisida «kelajak» bo‘lishi mumkin [2].

Sistatin C sistatinlar genetik oilasining 2-guruhiga mansub oqsildir. U birinchi bo‘lib buyrak patologiyasi bo‘lgan bemorlarning orqa miya suyuqligi va siydigida oqsil sifatida ajratilgan [1].

Klotho so‘nggi yillarda turli xil fiziologik jarayonlarda, jumladan, buyraklar faoliyati va qarishdagi roli tufayli etiborga sazovor bo‘lgan oqsildir.

Tadqiqot maqsadi

Klotho diabetik nefropatiyani erta tashxislash va xavf stratifikatsiyasi uchun potensial biomarker sifatida o‘rganilishi kerak. Bundan tashqari, bir nechta omillar Klotho darajalariga ta’sir qilishi mumkin va klinik foydalanish uchun standartlashtirilgan o‘lchash usullari va mos yozuvlar diapazonlarini yaratish uchun ko‘proq tadqiqotlar talab yetiladi.

Material va usullar

2 tur qandli diabet bilan og‘rigan bemorlarda diabetik nefropatiyaning erta tashxislash maqsadida qon zardobida klotho omili va sistatin Cni miqdori tekshi-

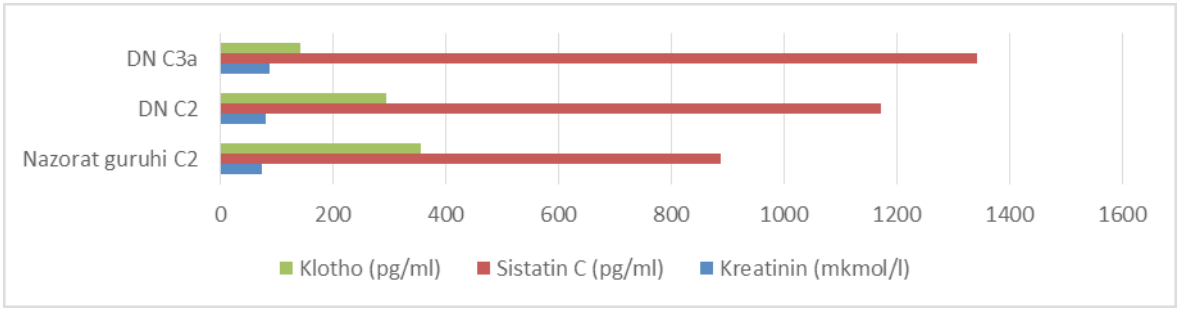
rilib, o‘rganildi. Bunda tadqiqotga mikroalbuminuriya mavjud bo’lgan bemorlar saralab olindi.

Buyrak funksiyasi normal yoki o‘rtacha darajada kamaygan 2 tip qandli diabet bilan kasallangan 33 erkak va 87 ayol, jami:120 nafar bemor tekshirildi.

Natijalar va muhokama

Tadqiqotga mikroalbuminuriya mavjud bo’lgan bemorlar saralab olindi.

Tekshirilayotgan nazorat guruhidagilarning qon zardobida sistatin C ning konsentratsiyasi 887,05 ± 180,5 pg/ml; plazma kreatinining miqdori 75,19 ± 8,6 mkmol/lni tashkil qilgan bo‘lsa, 2 tip qandli diabet bilan og‘rigan gfr cr-cys C(ml/min/1.73 m2) formulasiga ko‘ra C2 guruhidagi bemorlarda qon zardobida sistatin C ning konsentratsiyasi 1171,18 ± 119,4 pg/ml ; plazma kreatinining miqdori 81,3 ± 13,9 mkmol/lni tashkil qildi va 2 tip qandli diabet bilan og‘rigan gfr cr-cys C (ml/min/1.73 m2) formulasiga ko‘ra C 3a guruhidagi bemorlarda qon zardobida sistatin C ning konsentratsiyasi 1342,18 ± 169,01 pg/ml; plazma kreatinining miqdori 88,27 ± 15,5 mkmol/lni tashkil qildi.

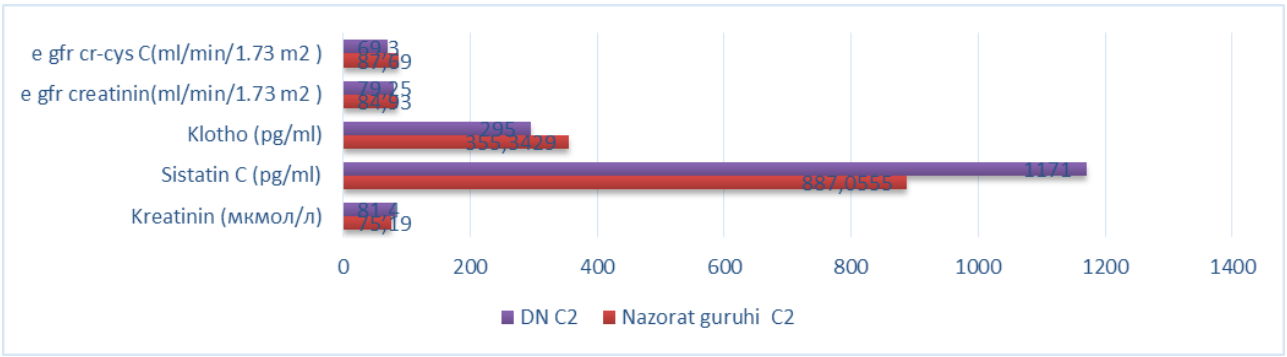


1-rasm. e gfr cr-cys C formulasiga ko‘ra KFT C2 bo‘lgan nazorat; DNli C2 va C3a bemorlar guruhlarida buyraklar funksional holatini ko‘rsatuvchi qon biokimyoviy ko‘rsatkichlari.

Bunda e gfr cr-cys C formulasiga ko‘ra nazorat guruhida buyraklar koptokchalari filtratsiyasi tezligi 87.69 ml/min/1.73m^2 ni tashkil etgan bo‘lsa, bemorlarning buyraklar koptokchalari filtratsiyasi tezligi o‘rtacha ko‘rsatgichlari C2 guruhda 69.3 ml/min/1.73m^2 ni tashkil etdi va C 3a guruxda 54.9 ml/min/1.73m^2 ni tashkil etdi.

e gfr cr-cys C formulasiga ko‘ra KFT C2 bo’lgan nazorat va C2li bemorlar guruhlaridagilar qonidagi klotho miqdorining ko‘rsatkichlarini o‘rgandik. Bunda nazorat guruhida e gfr cr formulasiga ko‘ra KFT -87.93 ml/min/1.73m^2 ni tashkil etgan holatda ushbu guruhdagilar qonidagi klotho miqdorining o‘rtacha ko‘rsatkichlari 355.34 pg/ml ni tashkil etdi.

e gfr cr-cys C formulasiga ko‘ra KFT C2 bo’lgan bemorlarni o‘rganganimizda KFT o‘rtacha qiymatlari 69,3 ml/min/1.73m^2 ni tashkil etdi ushbu bemorlar qonidagi klotho miqdorining o‘rtacha ko‘rsatkichlari esa 295 pg/ml ni tashkil etdi.



2-rasm. e gfr cr-cys C formulasiga ko‘ra KFT C2 bo‘lgan nazorat; DNli C2 va C3a bemorlar guruhlarida buyraklar funksional holatini ko‘rsatuvchi qon biokimyoviy ko‘rsatkichlari.

e gfr cr-cys C formulasiga ko‘ra buyraklar koptokchalari filtratsiyasi tezligi o‘rtacha ko‘rsatgichlari C2 guruhda 69.3 ml/min/1.73m^2 ni tashkil etgan bemorlarda qon tahlilida Klotho miqdori o‘rganilganda qondagi klotho miqdorining o‘rtacha qiymatlari 295 pg/ml ni tashkil etgan bo’lsa , e gfr cr-cys C formulasiga ko’ra buyraklar koptokchalari filtratsiyasi tezligi o‘rtacha ko‘rsatgichlari C3a guruhida 54.9 ml/min/1.73m^2 ni tashkil etgan holatdagi bemorlar qonidagi klotho markerining o’rtacha ko‘rsatgichlari 142.3 pg/ml ni tashkil etdi.

Nazorat guruhi va bemorlar qonida kreatinin, sistatin C miqdori tekshirilib e gfr cr-cys C formulasi orqali buyraklar filtratsiya tezligini hisoblangan guruhlarning qonida klotho miqdorini o‘rganib o‘zaro bog‘lanish borligini tahlil qildik va qiyosiy o‘rgandik. Bunda e gfr cr-cys C formulasiga ko‘ra nazorat va bemorlar guruhlarida kft kamaygani sari klotho miqdorining ham kamayib borishi kuzatildi.

Xulosa

O‘tkazilgan tadqiqot natijalariga ko‘ra diabetik nefropatiyali bemorlarda, surunkali buyrak kasalligining erta bosqichlarida klotho miqdorining, nazorat guruhiga nisbatan miqdorining past bo‘lishi va koptokcha filtratsiya tezligi pasayishiga mos ravishda Klotho miqdorining ham pasayib borishi ushbu oqsilning diabetik nefropatiya fonida rivojlangan surunkali buyrak kasalligining erta diagnostikasida muhim ahamiyatga ega ekanligini ko‘rsatadi.

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2 TUR QANDLI DIABET BILAN OG'RIGAN BEMORLARDA DIABETIK NEFROPATIYA RIVOJLANISHIDA KLOTHO OMILINING AHAMIYATI

Sadikova N.G., Miraxmedova X.T., Botirova N.A.

***Maqsad**: 2 tur qandli diabet bilan og'rigan bemorlarda diabetik nefropatiya rivojlanishida klotho omilining ahamiyatini o'rganish. **Material va usullar:** buyrak funksiyasi normal yoki o'rtacha darajada kamaygan 33 erkak va 87 ayol, jami 120 bemor tekshirildi. **Natijalar:** surunkali buyrak kasalligining dastlabki bosqichlarida diabetik nefropatiya bilan og'rigan bemorlarda klotho omil darajasi nazorat darajasidan past bo'ladi va glomerulyar filtratsiya tezligining pasayishi bilan pasayish davom etmoqda. **Xulosa:** diabetik nefropatiya fonida rivojlangan surunkali buyrak kasalliklarini erta tashxislashda klotho oqsilining ahamiyati aniqlandi.*

***Kalit so'zlar:** Klotho, kreatinin, diabetik nefropatiya, 2 tur qandli diabet, mikroalbuminuriya, glomerulyar filtratsiya tezligi.*