

ANALYSIS OF THE CARDIOVASCULAR SYSTEM CONDITION IN PATIENTS WITH CHRONIC KIDNEY DISEASE IN THE SAMARKAND REGION

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Abstract.

Chronic kidney disease (CKD) is a serious issue in modern healthcare. Numerous studies conducted over the past ten years have shown that the likelihood of cardiovascular diseases (CVD) increases even with a slight decrease in glomerular filtration rate (GFR) and continues to rise as CKD progresses, reaching its peak at the terminal stage. The risk of cardiovascular pathology in CKD patients increases as GFR declines, and mortality associated with this condition significantly exceeds the overall population mortality rate. The prolonged course of CKD often leads to secondary changes in the cardiovascular system, including dystrophic changes in the myocardium, atherosclerosis, arterial hypertension, left ventricular hypertrophy, electrolyte imbalances, and conduction and rhythm disturbances. All these processes contribute to the onset and progression of cardiovascular diseases. **Objective.** To study the structural and functional changes in the cardiovascular system in patients with CKD at different stages of the disease. **Materials and methods.** To achieve the research objectives, objective, subjective, and laboratory-instrumental methods were used, along with Doppler echocardiography (EchoCG) in 100 patients who underwent examination and treatment at Samarkand City Hospital from 2022 to 2023. **Results.** Laboratory test analysis revealed decreased hemoglobin and hematocrit levels in the blood. Echocardiographic studies were conducted on 100 patients to assess structural changes in the heart and their severity at various stages of CKD. The study examined key EchoCG parameters characterizing heart structures, including left ventricular wall thickness, left ventricular myocardial mass, and the condition of the heart valve apparatus. **Conclusion.** The results of our study indicate that anemia plays a significant role in the development and progression of cardiovascular diseases, which are highly prevalent in CKD patients. A consistent correlation was found between the frequency, nature, and severity of left ventricular remodeling and the decrease in GFR.

Key words: chronic kidney disease, cardiovascular system, echocardiography.

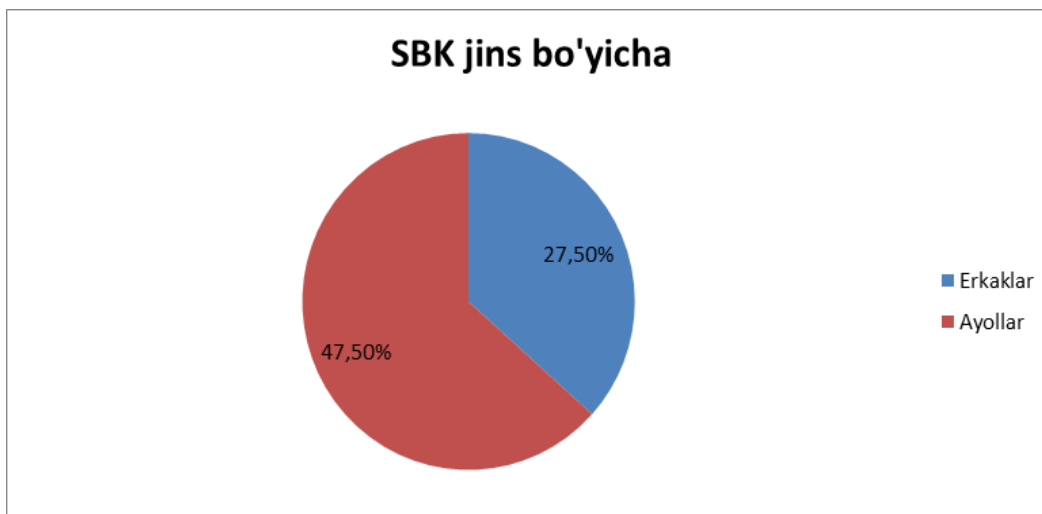
Kirish. So'nggi vaqtlarda surunkali buyrak kasalligi (SBK) zamonaviy tibbiyotning jiddiy muammosiga aylanmoqda. SBK va yurak-qon tomir tizimiga talluqli shikastlanishga ega bemorlar soni ortib bormoqda. Shu bois, SBK bilan yurak-qon tomir patologiyasining birgalikda uchrashi kasalligini kechishiga salbiy ta'sir ko'rsatmoqda. AQShning Milliy diabet va buyrak kasalliklari instituti (National Institute of Diabetes and Kidney Diseases) ma'lumotlariga ko'ra, SBK bo'lgan bemorlarda kardiologik asoratlardan vafot etish xavfi SBKligining terminal bosqichga o'tish xavfiga nisbatan 20 marta yuqori. SBK bo'lgan bemorlarning taxminan 90% i terminal bosqichga yetib bormay, asosan miokard infarkti, yurak yetishmovchiligi, insult, to'satdan yuz bergan o'lim kabi yurak-qon tomir kasalliklari asorati sababli vafot etadilar. Yurak-qon tomir patologiyasi buyrak faoliyati buzilgan bemorlarda sog'lomlarga nisbatan 64% yuqori. Ayni shu ikkilamchi darajali SBK o'zgarishlari davomida yurak-qon tomir tizimidagi jiddiy xavfni belgilaydi.

Tadqiqot maqsadi: SBK rivojlanishining turli bosqichlarida yurak-qon tomir tizimidagi tuzilish va funksiyaviy o'zgarishlarni o'rganish.

Tadqiqot materiallari va usullari: Qo'yilgan vazifalarni hal qilish maqsadida 2022 yildan 2023 yilgacha Samarqand shahar shifoxonasida tekshiruv va davolashdan o'tgan 100 nafar bemorga

nisbatan ob'ektiv, sub'ektiv va laborator-asbobli tekshiruv usullari, jumladan doppler-ExoKG qo'llanildi. SBK bo'lgan bemorlarning jinsiga ko'ra taqsimoti: ayollar — 62 nafar (77,5%), erkaklar — 38 nafar (47,5%) ni tashkil qildi (1-rasm).

Rasm-1

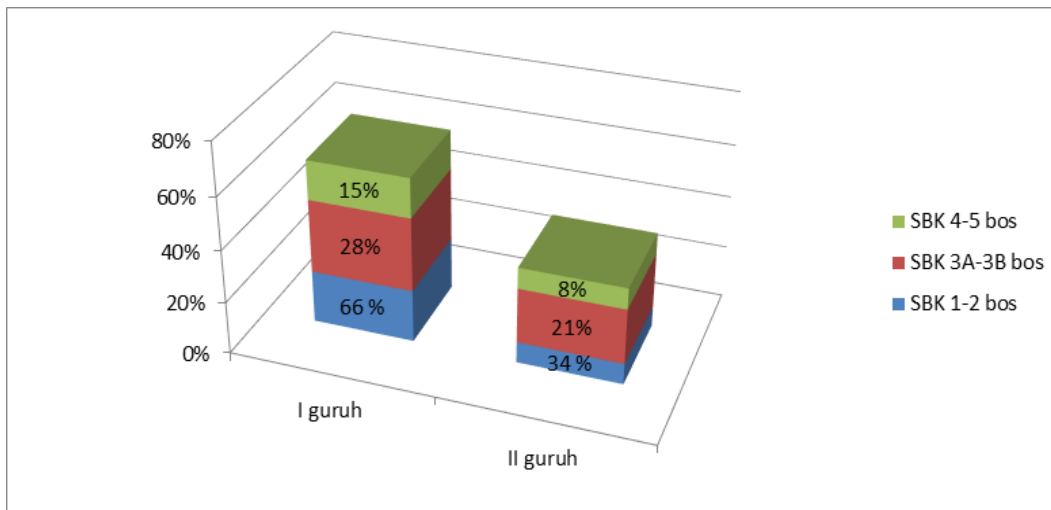


Tadqiqotda ishtirok etgan bemorlarning yoshi 18 yoshdan 80 yoshgacha bo'lib, o'rtacha yosh $50,1 \pm 1,1$ yoshni tashkil etdi. Bizning kuzatuvlarimizga ko'ra, SBKning asosiy sabablari quyidagicha aniqlandi: surunkali pielonefrit — 38 bemor (47,5%), glomerulonefrit — 26 (32,5%), buyraklar polikistozi — 16 (20%), qandli diabetga bog'liq nefropatiya — 20 bemor (25%). Barcha bemorlarga umumiy qon tahlili, kreatinin miqdori va lipid spektrini aniqlashni o'z ichiga olgan laborator tekshiruvlar majmuasi o'tkazildi. Glomerulyar filtratsiya tezligi (GFT) CKD-EPI formulasi bo'yicha hisoblandi, chunki ushbu usul $KFT > 60 \text{ ml/min/1,73 m}^2$ bo'lgan holatlarda aniqroq baholash imkonini beradi. Olingan natijalarga ko'ra, SBKning bosqichlari aniqlandi. Buyraklar azot chiqarish funksiyasiga qarab bemorlar NKF K/DOQI 2002 tasnifiga muvofiq guruhlariga ajratildi: SBK 1-bosqich — 4 bemor (5%) 2-bosqich — 24 (32%) 3-bosqich — 46 (57,5%) 4-bosqich — 14 (17,5%) 5-bosqich — 12 (15%). Exokardiografik tekshiruv 3 rejimda olib borildi: doppler, M-rejim va V-rejim. AQSh Exokardiografiya jamiyati protokoli standartlariga muvofiq, tekshiruvlar chap qorinchadan (ChQ) ikkitomonlama kesimdagi ikki o'lchamli tasvirlar orqali M-rejimda o'tkazildi. Tekshiruv uchun quyidagi ko'rsatkichlar tahlil qilindi: so'ngi sistolik diametr (SSD, mm), so'ngi sistolik chap qorincha hajmi (SChQH, ml), so'ngi diastolik diametr (SDD, mm), so'ngi diastolik hajmi (SDH, ml), chap qorincha sistolik diametri (ChQSD, mm), o'ng qorincha diastolik o'lchami (O'QD, mm), qorinchalar orasidagi devor qalinligi (QODQ, mm), orqa devorining qalinligi (ODQ) — mm. Tadqiqot natijalarining statistik tahlili "STATISTICA 5.0" dasturida amalga oshirildi. Miqdoriy ko'rsatkichlar medianalar va intellektual intervallarda ifodalangan. Guruhlar orasidagi ko'p sonli taqqoslashlar Mann-Uitni usuli orqali baholandi ($p < 0,05$). Yurak-qon tomir tizimi (YuQTT) shikastlanishi va SBK bosqichiga qarab bemorlar 2 guruhga ajratildi: I guruh — YuQTT shikastlanishsiz SBKga ega bo'lgan 63 bemor. Ular 18 yoshdan 72 yoshgacha bo'lib, o'rtacha yosh — 46 ± 1 . Guruhda 22 nafar erkak va 41 nafar ayol bo'lib, ularda SBKning turli bosqichlarida GFT kamayishi kuzatilgan: SBK 1–2 bosqich — 20 bemor, SBK 3A–3B bosqich — 28 bemor, SBK 4–5 bosqich — 15 bemor. II guruh — SBK bilan birga YuQTT shikastlanishiga ega 37 bemor. Ular 40 yoshdan 80 yoshgacha bo'lib, o'rtacha yosh — 50 ± 2 . Ular orasida 8 erkak va 19 ayol bor edi: SBK 1–2 bosqich — 8 bemor, SBK 3A–3B bosqich — 20 bemor, SBK 4–5 bosqich — 9 bemor (2-rasm).

Tadqiqot natijalari. Laborator tekshiruv natijalari tahlili qonda gemoglobin va gematokrit miqdorining pasayganini ko'rsatdi. I guruhdagi SBK 1–2 bosqichli bemorlar orasida kamqonlik 4 nafarda (7,54%) kuzatilgan. SBK 3A–3B bosqichida esa bu ko'rsatkich 11 nafarni, ya'ni 13,75% ni tashkil etdi. SBK 4–5 bosqichida kamqonlik sindromi 15 nafarda (28,29%) aniqlangan. II guruhdagi SBK bo'lgan bemorlar orasida esa kamqonlik ko'proq hollarda, ayniqsa 4–5 bosqichda 22 nafar (81,4%) bemorda uchragan. SBK 1–2 bosqichli bemorlarda bu ko'rsatkich 7 nafarni (25,9%) tashkil qilgan. SBK 3A–3B bosqichida kamqonlik 14 nafar (51%) bemorda aniqlangan. Qondagi lipidlar spektri asosiy ko'rsatkichlari tahliliga ko'ra, barcha guruhlarda me'yordan yuqori darajalar qayd etilgan. Ammo II

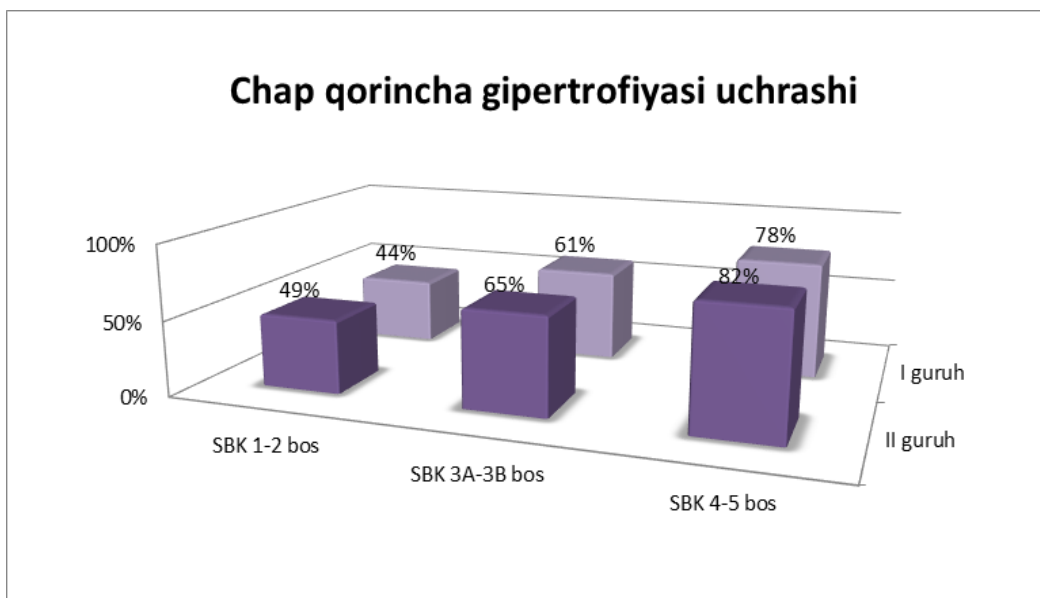
guruhdagi bemorlarda bu ko'rsatkichlar I guruhga nisbatan ancha yuqori bo'lgan. Yurak tuzilmasidagi o'zgarishlarni baholash maqsadida 100 nafar bemorda exokardiografik tekshiruv o'tkazildi. ExoKGda asosiy urg'u chap qorinchaning devor qalinligi va miokard massasiga, shuningdek, yurak klapan apparati holatiga qaratildi. SBK bo'lgan bemorlar orasida chap qorinchaning gipertrofiyasi (ChQG) ko'proq II guruhda, ayniqsa SBK 4–5 bosqichida (82%) uchragan va eng kam SBK 1–2 bosqichida (49%) qayd etilgan. SBK 3A–3B bosqichida ChQG aniqlanish chastotasi 65% ni tashkil etdi.

Rasm-2



I guruhda esa ChQG quyidagicha taqsimlangan: SBK 4–5 bosqich — 78% SBK 1–2 bosqich — 44% SBK 3A–3B bosqich — 61% (3-rasm) Tekshiruvdan o'tgan bemorlarda mitral va aorta klapanlarida quyidagi o'zgarishlar aniqlandi: fibroz, kalsinoz va regurgitatsiya. Faqat 2 nafar bemorda kam darajadagi regurgitatsion oqimlar kuzatilgan: MR 1–2 darajali va AR 0–1 darajali, ular klapan pardalarining o'rtacha deformatsiyasi bilan bog'liq bo'lib, klinik ahamiyatga ega emasdi. Mitral klapaning fibroz va kalsinoz o'zgarishlari II guruhdagi bemorlarda 78% holatda kuzatilgan. I guruhda esa bu ko'rsatkich mos ravishda 57% va 60% ni tashkil etgan.

Rasm-3



Xulosalar. Olib borilgan tadqiqotlarimiz natijalari shuni ko'rsatadiki, anemiya yurak qon-tomir sistemasi asoratlarining (YuQTA) rivojlanishi va progressiyasida muhim rol o'ynaydi va bu holat surunkali buyrak kasalligi (SBK) bo'lgan bemorlarda yuqori uchraydi. Anemiya YuQTAning boshlanishiga turtki bo'lishi bilan birga, nefropatiyaning ham tezlashishiga hissa qo'shadi. SBK bo'lgan bemorlarda anemiyani o'z vaqtida aniqlash va davolash azotemiyaning har qanday bosqichida YuQTAning rivojlanishini sezilarli darajada sekinlashtirishi mumkin.

Chap qorinchaning (ChQ) remodullanishining chastotasi, xususiyati va og'irligi hamda

koptokschalar filtratsiya tezligi ko'rsatkichining pasayishi o'rtasida barqaror bog'liqlik aniqlandi. Yurak gipertrofiyasining eksentrik turi SBK paydo bo'lgan vaqt va uning progressiya darajasiga to'g'ridan-to'g'ri mutanosibdir. ChQ gipertrofiyasi ko'proq konsentrik tusga ega bo'lib, SBKning ilk bosqichlarida paydo bo'ladi va arterial gipertoniya (AG) davomiyligi bilan ham korrelyatsiya qiladi. SBK bo'lgan bemorlarda yurak-qon tomir asoratlarini erta aniqlash – bemorni kompleks davolash asosidir.

Nefrolog va kardiologlarning hamkorlikdagi ishi ushbu asoratlarni o'z vaqtida aniqlab, samarali davolashni ta'minlab, yaxshi natijalarga olib keladi.

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