Article

Miokard infarti o‘tkazgan bemorlarda stentlash orqali o‘tkazilgan revaskulyarizatsiyaning chap qorincha otish fraksiyasiga ta‘siri

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Annotatsiya:
Maqsad. Chap qorincha otish fraksiyasi saqlangan (CHQOF) yoki biroz pasaygan, anamnezida miokard infarkti (MI) o‘tkazgan bemorlarda to‘liq yoki noto‘liq revaskulyarizatsiyaning yurak sistolik funksiyasiga 1 yillik dinamik ta’sirini baholashdan iborat.
Materiallar va usullar. Tadqiqotga anamnezida MI o‘tkazgan 270 nafar bemor jalb qilinib, transtorakal exokardiografiya, klinik tekshiruv xulosalari asosida koronaroangiografiya amaliyoti (KAG) o‘tkazildi. Bemorlarda aterosklerotik koronar tomirlar shikastlanish soniga nisbatan stentlash amaliyoti o‘tkazilishiga qarab 3 guruhga ajratildi: To‘liq revaskulyarizatsiya (TR) (n=115), Noto‘liq revaskulyarizatsiya (NTR) (n=94), Revaskulyarizatsiya bo‘lmagan (RB) guruhi (n=61). Amaliyotdan so‘ng bemorlar standart davolanish bilan uyga chiqarildi. Dinamikada 1 yildan so‘ng bemorlar takroriy EXOKG tekshiruvi orqali CHQOF baholandi.
Natijalar. Dinamikada TR o‘tkazilgan bemorlar guruhida CHQOF 54.0 [47.0; 59.7] dan 55,7 [46,9;61,4] ga statistic ishonarli tarzda ortdi (p = 0,017). NTR bemorlar guruhida CHQOF 53,9 [43,7;56,4] dan 55,7 [46,9;61,4] ga ortsada, ammo natijalar statistik ishonarsiz (p = 0,458). RB bemorlar guruhida CHQOF 50,7 [45; 56,3] dan 48,2 [41,8; 54,3] ga pasaygan(p = 0,011). Chap qorinchani diastolik funktsiyasini baholovchi parametrlar bo‘yicha esa guruhlar orasida statistik ahamiyatga ega farqlar aniqlanmadi.
Xulosa. Infarktdan keyingi davridagi bemorlarda stentlash orqali amalga oshirilgan shikastlangan koronar tomirlar to‘liq anatomik revaskulyarizatsiyasi ChQOF ko‘rsatkichlari sezilarli ijobiy yaxshilanishiga ta’sir etishi aniqlandi.

Kalit so’zlar: Miokard infarkti, otish fraksiyasi, stentlash amaliyoti, revaskulyarizatsiya, yurak yetishmovchiligi

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The impact of revascularizatıon vıa stentıng on left ventricular ejection fraction ın patients with myocardial infarction

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Abstract:
Aim. To evaluate the one-year dynamic effect of complete or incomplete revascularization on left ventricular ejection fraction (LVEF) in patients with a history of myocardial infarction (MI) who have preserved or mildly reduced LVEF.
Materials and methods. The study included 270 patients with a history of MI. All patients underwent transthoracic echocardiography and coronary angiography (CAG) based on clinical examination findings. Depending on the number of affected atherosclerotic coronary vessels and the extent

of stenting performed, patients were divided into three groups: Complete revascularization (CR) (n=115), Incomplete revascularization (IR) (n=94), and No revascularization (NR) (n=61). After the procedure, all patients were discharged with standard treatment. After one year, follow-up echocardiographic assessment of LVEF was performed.

Results. In the CR group, LVEF increased significantly from 54.0 [47.0; 59.7] to 55.7 [46.9; 61.4] (p = 0.017). In the IR group, LVEF increased from 53.9 [43.7; 56.4] to 55.7 [46.9; 61.4], but the change was not statistically significant (p = 0.458). In the NR group, LVEF decreased from 50.7 [45.0; 56.3] to 48.2 [41.8; 54.3] (p = 0.011). No statistically significant differences were observed between groups in terms of diastolic function parameters of the left ventricle.

Conclusion. In post-infarction patients, complete anatomical revascularization of affected coronary arteries via stenting has a significantly positive impact on the improvement of LVEF.

Keywords: Myocardial infarction, ejection fraction, stenting, revascularization, heart failure.

Kirish

So‘nggi yillarda tibbiyotda zamonaviy diagnostika va davolash usullarining joriy etilishi yurak-qon tomir kasalliklari bilan bog‘liq bo‘lgan og‘ir asoratlar va o‘lim ko‘rsatkichlarini kamaytirishda muhim ahamiyat kasb etmoqda. Shunday innovatsion yondashuvlardan biri bo‘lgan toj tomirlar revaskulyarizatsiyasi orqali nafaqat miokard infarkti (MI)ning oldini olish, balki infarktdan keyingi erta va kechki asoratlarni kamaytirish imkoniyati yaratilmoqda.

Miokard revaskulyarizatsiyasi, odatda, koronar tomirlar stentlash amaliyoti yoki aorta-koronar shuntlash orqali amalga oshiriladi. O‘tkazilgan bir nechta yirik klinik tadqiqotlar MI o‘tkazgan bemorlarda revaskulyarizatsiya umumiy o‘lim va yurak-qon tomir kasalliklariga (YQTK) bog‘liq umumiy o‘lim ko‘rsatkichlarini sezilarli darajada kamaytirishi tasdiqlagan [1,2].

Ayniqsa, ko‘p tomirli koronar arteriya shikastlanishi mavjud bo‘lgan bemorlarda to‘liq miokard revaskulyarizatsiyasi hayot uchun xavfli qorinchalar aritmiyalari, yurak yetishmovchiligi va umumiy o‘lim xavfini sezilarli darajada kamaytiradi [3]. YQTK mavjud bemorlarda surunkali davom etuvchi gipoperfuziya natijasida yuzaga kelgan ishemiya sababli chap qorincha sistolik disfunksiyasi rivojlanadi. Reperfuzion davolash yordamida shikastlangan miokard sohalarida koronar qon oqimining tiklanishi umumiy qisqaruvchanlikni yaxshilaydi, bu esa yurak yetishmovchiligining kuchayishini sekinlashtiradi [3–5]. Ayniqsa o‘tkazilgan MIdan keyingi chandiq to‘qima atrofida gibelnatsiya xolatidagi miokardning mavjudligi, uning xayotchanligini tiklanishi ishemik xolatni kamaytirishga olib keluvchi reperfizuya bilan uzviy bog‘liqliligi, ushbu bosqichda amalga oshirilgan revaskulyarizatsiya jarayoni orqali ishemiyaga uchragan sohada sog‘lom miokard ulushini ortishiga sababchi bo‘lishini alohida takidlash lozim.

Ma’lumki, chap qorincha otish fraksiyasi (ChQOF) ning pasayishi — to‘satdan yurak o‘limi uchun asosiy prediktorlardan biridir. Shu bois, revaskulyarizatsiya va yurak yetishmovchiligini kamaytirishga qaratilgan optimal medikamentoz davolash natijasida ChQOF yaxshilanishi, hayot uchun xavfli aritmiyalar chastotasining kamayishi mumkin [6,7]. So‘nggi tavsiyanomalarda ishemik etiologiyali yurak to‘xtashi kuzatilgan bemorlarda xam toj-tomirlar revaskulyarizatsiyasi amaliyoti tavsiya etilishi ko‘zda tutilgan [9].

Garchi revaskulyarizatsiya amaliyotining ijobiy ta‘siri STICH Trial [5], PARR-2 Trial [10], HEART Trial [11] kabi yirik tadqiqotlarda o‘z tasdig‘ini topgan bo‘lsa-da, CHQOF <35% bo‘lgan bemorlarda o‘tkazilgan REVIVED-BCIS2 Trial natijalari bunday afzallikni isbotlamagan [12]. Shu bilan bir qatorda saqlangan yoki biroz pasaygan ChQOFga ega bemorlarda stentlash orqali amalga oshiriladigan revaskulyarizatsiyaning samaradorligi yuzasidan hozirgi kunda turli qarama-qarshi fikrlar mavjud [13–15]. Shuningdek CORALYS registri subanalizida, o‘tkir koronar sindrom bilan ko‘p tomirli koronar arteriya shikastlanishi bo‘lgan bemorlar orasida to‘liq revaskulyarizatsiya yurak yetishmovchiligi bilan bog‘liq birlamchi gospitalizatsiya va yurak-qon tomir o‘limi xavfini 30–40% ga kamaytirgan [4] Ammo MIning o‘tkir davridan keyingi davrda amalga oshirilgan stentlash amaliyotining ijobiy ta‘siri kam o‘rganilgan yo‘nalishlardan biri bo‘lib qolmoqda.

Shu sababli, ushbu maqolaning asosiy maqsadi — ChQOF saqlangan yoki biroz pasaygan, anamnezida MI o‘tkazgan bemorlarda to‘liq yoki noto‘liq revaskulyarizatsiyaning yurak sistolik funksiyasiga 1 yillik dinamik ta’sirini baholashdan iborat.

Tadqiqot maqsadi anamnezida Q tishchali miokard infarti o‘tkazgan bemorlarda stentlash orqali o‘tkazilgan to‘liq va noto‘liq revaskulyarizatsiyaning chap qorincha otish fraksiyasiga ta‘sirini dinamikada 1 yilda baholashdan iborat.

Materiallar va usullar

Tadqiqotga 38–75 yoshdagi, anamnezida o‘tkazilgan o‘tkir MI (3 va 4 MI aniqlagichi)dan 40 kundan keyingi davrda bo‘lgan 270 nafar bemor jalb qilinib, birinchi bosqichda (shifoxonada) bemorlar dastlabki 24 soat ichida anamnestik ma’lumotlar va fizik tekshiruvlar, umumiy klinik, laborator va instrumental tekshiruvlar, jumladan transtorakal exokardiyografiyadan o‘tkazildi. Klinik tekshiruv xulosalari asosida koronar angiografiya (KAG) amaliyoti o‘tkazilib, bemorlarning koronar tomir zararlanish darajasi baholandi.

Bemorlarda aterosklerotik koronar tomirlar shikastlanish (KTSh) soniga nisbatan stentlash amaliyoti o‘tkazilishiga qarab 3 guruhga ajratildi:

To‘liq revaskulyarizatsiya (TR) guruhi (n=115),

Noto‘liq revaskulyarizatsiya (NTR) guruhi (n=94),

Revaskulyarizatsiya bo‘lmagan (RB) guruhi (n=61).

Koronar arteriyalarni stentlash uchun amaliyotdan oldin ixtiyoriy yozma rozilik olindi. Diagnostik KAG va stentlash tekshiruvlari standart terapiya sharoitida olib borildi [16]. Amaliyotdan so‘ng bemorlar standart davolanish bilan uyga chiqarildi. Diagnostik KAG va/yoki stentlash amaliyotining 1 yildan so‘ng bemorlar ambulator sharoitda takroriy umumiy klinik tekshiruvlar va transtorakal EXOKG tekshiruvi orqali baholandi.

Dastlabki natijalar bemorlar guruhlarida o‘zaro taqqoslanganda (1-jadval) yosh, jins, TVI, MI joylashuvi, soni, davomiyligi, exokardiyografik chap qorinchadagi miokard massasi, indekslangan ko‘rsatkichi, sistolik va diastolik funksiyasi, stasionardan kuzatuvdagi farmakoterapiyasi bo‘yicha yaqqol tafovut kuzatilmadi. 2- va 3-guruh bemorlarda stentlashga ko‘rsatma bo‘lgan, ammo bemorning iqtisodiy holati yoki bemorning stentlash amaliyotini rad etishi kabi turli sabablar tufayli yurak jamoasi konsiliumiga asosan davolash taktikasi belgilandi. Koronar tomir shikastlanish soni bo‘yicha TR guruhida 1 va 2 tomir shikastlanishi ustunligi qayd etildi. Tadqiqot dizaynidan kelib chiqqan holda NTR guruhida 1 tomirli shikastlanish kuzatilmay, 3 tomirli shikastlanish qayd etilishi bemorlarning qariyb 2/3 qismini tashkil etdi. RB guruhda esa 1 va 3 tomirli shikastlanishga ega bemorlar qariyb 3/4 qismini tashkil etdi. Tadqiqot dizayni sababli NTR guruhida 3 tomirli shikastlanishga ega bemorlar ulushi yuqori bo‘lganligi sababli qolgan 2 guruhga nisbatan koronar tomir shikastlanishlari soni va SYNTAX shkalasi ko‘rsatkichlari bo‘yicha sezilarli farqlanish qayd etildi (1- jadval).

1 yildan so‘ng bemorlar guruhlarida sodir bo‘lgan birlamchi va ikkilamchi "yakuniy nuqtalar" sifatida to‘satdan yurak/arritmik o‘lim, boshqa sabablarga ko‘ra o‘lim, yurak-qon tomir kasalliklari sababli o‘lim, nofatal miokard infarkti, aorta-koronar shuntlash amaliyoti, shoshilinch stentlash amaliyoti noxush hodisalar sifatida baholandi va 1 yil davomida ushbu xodisalar 24 bemorda kuzatilib, dinamikadagi natijalardan chiqarib tashlandi.

Olingan natijalarni statistik qayta ishlash va tahlil qilish IBM SPSS Statistics 29.0 dasturi yordamida, Microsoft Excel 2010 materiallar bazasida olib borildi.

O‘rtacha arifmetik (M), o‘rtacha kvadratik standart og‘ish (SD), Mediana (Me), pastki (Q1) va yuqori (Q3) kvartil ko‘rsatkichlari hisoblab chiqildi. Farqlar $p<0,05$ ga teng bo‘lsa, ishonchli deb hisoblandi.

Natijalar

Dastlabki transtorakal exokardiografik tekshiruv natijalari tahliliga ko‘ra, RB guruhidagi bemorlarda qorinchalararo to‘siq qalinligi (QATQ) ko‘rsatkichlari TR va NTR guruhlariga nisbatan ishonchli darajada yuqori ekanligi aniqlandi ($p<0,002$; $p<0,002$). Bu holat chap qorincha devorida ancha izchil gipertrofik o‘zgarishlar borligini ko‘rsatadi.

Chap qorincha miokard massasi (ChQMM) indekslari o‘rtacha quyidagi qiymatlarda qayd etildi: TR guruhida — 109,3 [95; 127,4] g/m², NTR guruhida — 116,1 [100; 141,5] g/m², RB guruhida — 115,7 [100,2; 154,5] g/m². Statistik tahlil natijalariga ko‘ra, guruhlar o‘rtasida indekslangan ChQMM ko‘rsatkichlarida sezilarli farq aniqlanmadi, biroq barcha guruhlarda ushbu parametrlar normal me’yorlardan yuqori bo‘lib, chap qorincha gipertrofiyasi (ChQG) mavjudligini ko‘rsatdi.

Table 1. Clinical and demographic characteristics of the patients
Jadval 1. Bemorlarning klinik-demografik xususiyatlari

Ko‘rsatkichlar		**1-guruh (n=115)**	**2-guruh (n=94)**	**3-guruh (n=61)**	X^2	P
Yosh, yil		60 [54; 65]	62 [58; 69,8]	64 [58; 68]	0,20	0,658
Jins, erkak / ayol		96 (84,5%) / 19 (16,5%)	74 (78,7%) / 20 (21,3%)	44 (72,2%) / 17 (27,8%)	3,147	0,207
TVI, kg/m²		28,3 [25; 31]	28,4 [26,6; 31,3]	29,7 [28; 33,7]	0,15	0,694
Normal tana vazni, n (%)		12 (10,5%)	13 (13,8%)	8 (13,1%)	1,610	0,447
O‘MI davomiyligi, kun		145 [67,5; 566]	245 [45; 700]	414 [379; 432]	5,488	0,055
Shikastlangan toj tomirlar soni	**- 1 tomir**	58 (50,4%)	0 (0%)	22 (36,1%)	-	-
	- 2 tomir	42 (36,5%)	30 (31,9%)	17 (27,8%)	2,300	0,317
	- 3 va ko‘p tomirlar	15 (13,1%)	64 (68,1%)	22 (36,1%)	66,883	<0,001
O‘rtacha toj tomir shikastlanish soni		1,63 ± 0,70	2,68 ± 0,46	1,96 ± 0,89	86,423	<0,001
Shikastlangan tomirni stentlash darajasi, %		100%	50 [33,3;66,7]	0%	-	-
SYNTAX score (SS)		13 [8; 18]	19,5 [14;25,3]	16,8 [9; 25,9]	7,112	0,032
Beta-blokator		112 (97,5%)	94 (100%)	57 (93,4%)	4,982	0,083
AAF/ARA		56 (59,6%)	62 (66,0%)	37 (60,7%)	0,323	0,851
Kalsiy antagonistlari		70 (61,0%)	50 (53,2%)	31 (50,8%)	1,234	0,540
ARNI		21 (18,3%)	20 (21,3%)	19 (31,2%)	1,883	0,390
Nitrat		29 (25,2%)	28 (28,5%)	21 (34,4%)	0,587	0,746
Amiodaron		11 (9,5%)	8 (8,5%)	7 (11,5%)	0,148	0,929
MRA		53 (46%)	43 (45,7%)	36 (59,1%)	0,453	0,656
Statin		112 (97,5%)	94 (95,9%)	60 (98,3%)	2,528	0,283
Aspirin		115 (100%)	94 (100%)	59 (96,7%)	0,941	0,625
Klopidogrel		111 (96,6%)	90 (95,8%)	51 (83,6%)	8,508	0,014

Yurakning sistolik funksiyasini baholovchi hajmiy ko‘rsatkichlar — chap qorincha otish fraksiyasi (ChQOF), yakuniy sistolik hajm (YSH) va yakuniy diastolik hajm (YDH) bo‘yicha guruhlararo farqlar ahamiyatli emas edi (p>0,05). Barcha guruhlarda ChQOF saqlangan toifaga kiruvchi qiymatlarda bo‘lib, mos ravishda TR guruhida 54%, NTR guruhida 53,9% va RB guruhida 50,7% tashkil etdi.

ChQOF ko‘rsatkichlari asosida bemorlar saqlangan (>50%) va biroz pasaygan (41–50%) guruhlarga ajratilganida, biroz pasaygan ChQOF bemorlar soni TR guruhida 50 nafar (43,5%), NTR guruhida 40 nafar (42,6%) va RB guruhida 27 nafar (44,3%) ni tashkil etdi. Guruhlararo taqqosloviy tahlil ushbu ko‘rsatkichlarda ham statistik sezilarli tafovut mavjud emasligini ko‘rsatdi (p>0,05).

Chap qorinchaning diastolik funksiyasi bilan bog‘liq parametrlar bo‘yicha ham guruhlar o‘rtasida statistik ahamiyatli tafovut aniqlanmadi.

Bir yillik dinamik kuzatuv natijalariga ko‘ra, takroriy transtorakal exokardiyografiya (EOKG) asosida o‘tkazilgan tahlil shuni ko‘rsatdiki, to‘liq revaskulyarizatsiya (TR) o‘tkazilgan bemorlar guruhida chap qorinchaga xos remodellasiyaga oid ko‘rsatkichlar – qorinchalararo to‘siq qalinligi (QAT), orqa devor qalinligi (ODQ) va indekslangan chap qorincha miokard massasi (iChQMM) Ruxsat etilgan revaskulyarizatsiya (RB) guruhiga nisbatan sezilarli darajada yuqori bo‘lib chiqdi ($p = 0,041$ va $p < 0,001$). Shuningdek, hajmiy ko‘rsatkichlar – yakuniy diastolik hajm (YDH) va yakuniy sistolik hajm (YSH) ham TR guruhida ishonchli tarzda ortganligi aniqlandi. Chap qorinchani diastolik funktsiyasini baholovchi parametrlar bo‘yicha esa guruhlar orasida statistik ahamiyatga ega farqlar aniqlanmadi (Jadval 3).

Guruhlar ichidagi dinamikani tahlil qilganda, TR guruhida hajmiy ko‘rsatkichlardagi ijobiy o‘zgarishlar fonida chap qorincha chiqarish fraksiyasi (ChQO) 3,2% ga ishonchli darajada oshgan ($p = 0,017$). Shu bilan birga, ushbu guruhda indekslangan miokard massasi, qorinchalararo to‘siq

va orqa devor massalarining kamayish tendensiyasi kuzatilgan bo‘lsa-da, faqat ODQ ko‘rsatkichida statistik ishonchlilik mavjud edi (p = 0,003).

Table 2. Linear and volumetric parameters of patients in the general group (n=270) based on initial echocardiographic examination results

Jadval 2. Dastlabki exokardiografik tekshiruv natijalari bo‘yicha umumiy guruhdagi bemorlarning chiziqli va hajmiy parametrlari (n=270)

Ko‘rsatkichlar	**1-guruh (n=110), Me [Q1; Q3]**	**2-guruh (n=90), Me [Q1; Q3]**	**3-guruh (n=45), Me [Q1; Q3]**	**P1-2**	**P2-3**	**P1-3**
YDO‘ LJ (sm)	5.2 [4.9; 5.6]	5.5 [5.0; 5.9]	5.4 [5.1; 5.9]	0.908	0.576	0.709
YSO‘ LJ (sm)	3.6 [3.4; 4.1]	3.9 [3.5; 4.4]	3.7 [3.4; 4.5]	0.708	0.257	0.124
QATQq (sm)	1.1 [1.1; 1.20]	1.1 [1.0; 1.23]	1.19 [1.0; 1.26]	0.981	0.002	0.001
ODQq (sm)	1.02 [1.0; 1.13]	1.05 [0.95; 1.14]	1.09 [0.98; 1.23]	0.831	0.086	0.114
ChQMM (g)	218.0 [183.1; 250.0]	227.4 [192.8; 258.7]	242.6 [201.7; 311.0]	0.891	0.068	0.042
iChQMM (g/m²)	109.3 [95.0; 127.4]	116.1 [100.0; 141.5]	115.7 [100.2; 154.5]	0.555	0.303	0.101
YDH (ml)	124.0 [98.3; 153.7]	125.4 [99.2; 173.7]	157.0 [128.0; 176.8]	0.462	0.240	0.051
YSH (ml)	55.0 [44.0; 77.9]	61.9 [46.5; 93.2]	76.4 [55.0; 102.0]	0.768	0.240	0.128
iYDH (ml/m²)	62.1 [50.6; 77.4]	72.9 [51.9; 88.7]	73.0 [63.3; 92.1]	0.340	0.656	0.166
iYSH (ml/m²)	27.9 [22.0; 40.0]	35.7 [22.8; 47.0]	34.8 [26.9; 51.7]	0.637	0.546	0.279
ChB (sm)	4.2 [3.7; 4.7]	4.2 [3.8; 4.4]	4.5 [4.0; 5.0]	0.791	0.137	0.071
O‘Q (sm)	3.3 [3.0; 3.5]	3.3 [3.0; 3.5]	3.4 [3.0; 3.6]	0.408	0.770	0.769
ChQOF (%)	54.0 [47.0; 59.7]	53.9 [43.7; 56.4]	50.7 [45.0; 56.3]	0.669	0.604	0.888
E	0.60 [0.51; 0.72]	0.62 [0.50; 0.71]	0.61 [0.50; 0.80]	0.460	0.268	0.653
A	0.74 [0.70; 0.81]	0.72 [0.70; 0.80]	0.73 [0.60; 0.80]	0.761	0.632	0.827

Noto‘liq revaskulyarizatsiya (NTR) guruhi bemorlarida ham ChQG (chap qorincha gipertrofiyasi)ni aks ettiruvchi ko‘rsatkichlarda musbat dinamika mavjud bo‘lib, biroq statistik ahamiyatga yetmagan. Shunga qaramay, hajmiy parametrlarning ijobiy o‘zgarishi ushbu guruhda sezilarli bo‘lgani ta’kidlashga arziydi.

RB guruhida esa miokard massasining ortishi statistik ishonchga ega bo‘lmagan bo‘lsa-da, hajmiy ko‘rsatkichlar dinamikasida manfiy o‘zgarishlar kuzatilib, ChQO 4,9% ga pasaygan (Jadval 3).

Diastolik disfunktsiya parametrlariga ko‘ra, barcha guruhlardagi bemorlarda 1-darajali diastolik disfunktsiya belgilari aniqlanib, A va E to‘lqinlari hamda ularning nisbati (E/A) ko‘rsatkichlarida guruhlararo sezilarli farqlar qayd etilmadiUshbu bo‘lim bo‘limlarga bo‘linishi mumkin. U tajriba natijalarini qisqacha va aniq tavsiflash, ularning talqinini hamda tajribadan chiqarilgan xulosalarni o‘z ichiga olishi kerak.

Table 3. Comparative results of echocardiographic indicators between groups after one year of follow-up

Jadval 3. Dinamikada 1 yildan so‘ng bemorlarning exocardiografik ko‘rsatkichlarining guruhlararo solishtirma natijalari

Ko‘rsatkichlar	**1-guruh (n=115), Me [Q1; Q3]**	**2-guruh (n=94), Me [Q1; Q3]**	**3-guruh (n=61), Me [Q1; Q3]**	**P1-2**	**P2-3**	**P1-3**
ChQYDO‘,sm	5.2 [4.9; 5.8]	5.5 [4.9; 5.9]	5.5 [5.1; 6.0]	0.977	0.195	0.196
ChQ YSO‘,sm	3.6 [3.3; 3.9]	3.8 [3.4; 4.1]	4.2 [3.5; 4.8]	0.688	0.071	0.026
QATQ, sm	1.1 [1.0; 1.2]	1.15 [1.0; 1.3]	1.2 [1.16; 1.3]	0.468	0.059	0.008
ODQ, sm	0.9 [0.8; 1.0]	1.0 [0.9; 1.1]	1.09 [1.0; 1.24]	0.529	<0.001	<0.001
ChQMM, g	194.2 [183.1; 223.3]	213.9 [167.3; 249.3]	257 [213.5; 324.4]	0.28	0.01	<0.001
iChQMM, g/m²	100 [90; 116]	108.9 [93.6; 136.3]	122.5 [105.6; 159.6]	0.158	0.041	<0.001
YADH, ml	115.4 [99; 143]	114 [93; 154]	153 [116; 173]	0.546	0.009	0.03
YASH, ml	52 [39; 70]	53 [38; 80]	78 [56; 102.2]	0.909	0.026	0.026
iYADH, ml/m²	60.9 [52.6; 73.6]	58.6 [47.3; 76.5]	71.2 [56.6; 89.4]	0.53	0.056	0.157
iYASH, ml/m²	26.7 [20.2; 35.8]	25.7 [19.3; 40.2]	35.4 [27; 54.9]	0.791	0.065	0.093
ChB, sm	4.2 [3.9; 4.6]	4.3 [3.8; 4.6]	4.7 [3.9; 5.2]	0.911	0.07	0.077

O‘Q, sm	3.4 [3.0; 3.7]	3.4 [3.2; 3.6]	3.5 [3.1; 3.7]	0.709	0.688	0.927
ChQOF, %	54.4 [46.9; 61.4]	55.4 [45.7; 59.1]	48.2 [41.8; 54.3]	0.491	0.19	0.042
E/A	0.8 [0.6; 0.9]	0.80 [0.71; 0.81]	0.8 [0.7; 1.2]	0.402	0.403	0.878

Table 4. Changes in echocardiographic parameters within groups over time in the general group of patients
Table 4. Bemorlarning umumiy guruhida exokardiografik ko‘rsatkichlarni dinamikada guruhlar ichida o‘zgarishi

Ko‘rsat-kichlar	**1-guruh (n=115)**			**2-guruh (n=94)**			**3-guruh (n=61)**		
	Me [Q1; Q3]			**Me [Q1; Q3]**			**Me [Q1; Q3]**		
ChQ YDO‘, sm	5,2 [4,9; 5,6]	5,2 [4,9; 5,8]	0,926	5,5 [5; 5,9]	5,5 [4,9; 5,9]	0,132	5,4 [5,1; 5,9]	5,5 [5,1; 6,0]	0,54
ChQYS O‘, sm	3,6 [3,4; 4,1]	3,6 [3,3; 3,9]	0,403	3,9 [3,5; 4,4]	3,8 [3,4; 4,1]	0,041	3,7 [3,4; 4,5]	3,8 [3,5; 4,8]	0,81
QATQ, sm	1,1 [1,1; 1,20]	1,1 [1; 1,2]	0,777	1,1 [1; 1,23]	1,15 [1; 1,3]	0,122	1,19 [1; 1,26]	1,2 [1,16; 1,3]	0,466
ODQ, sm	1,02 [1; 1,13]	0,95 [0,8; 1]	0,003	1,05 [1;1,2]	1,0 [0,9; 1,1]	0,019	1,09 [0,98; 1,2]	1,09 [1; 1,24]	0,456
ChQMM, g	218 [183,1; 250]	202,2 [183,1; 223,3]	0,057	227,4 [192,8; 258,7]	213,9 [167,3; 249,3]	0,236	242,6 [201,7; 311]	257 [213,5; 324,4]	0,372
iChQMM, g/m²	109,3 [95; 127,4]	102 [90; 116]	0,057	116,1 [100; 141,5]	108,9 [93,6; 136,3]	0,194	115,7 [100,2; 154,5]	122,5 [105,6; 159,6]	0,313
YADH, ml	124 [98,3; 153,7]	115,4 [99; 143]	0,234	125 [99,2; 173,7]	114 [93; 154]	0,001	157 [128; 176,8]	153 [116; 173]	0,101
YASH, ml	55 [44; 77,9]	52 [39; 70]	0,145	61,9 [46,5; 93,2]	53 [38; 80]	0,014	76,4 [55; 102]	78 [56; 102,2]	0,899
iYADH, ml/m²	62,1 [50,6;77,4]	57,7 [53;73,6]	0,112	72,9 [51,9;88,7]	58,6 [47; 76,5]	0,001	73,0 [63,3; 92,1]	71,2 [56,6; 89,4]	0,101
iYASH, ml/m²	27,9 [22; 40]	26,2 [20;35,8]	0,125	35,7 [22,8; 47]	25,7 [19; 40]	0,009	34,8 [26,9; 51,7]	35,4 [27; 54,9]	0,976
ChB, sm	4,2 [3,7; 4,7]	4,3 [3,9; 4,6]	0,878	4,2 [3,8; 4,4]	4,3 [3,8; 4,6]	0,766	4,5 [4,0; 5]	4,7 [3,9; 5,2]	0,422
O‘Q, sm	3,3 [3,0; 3,5]	3,3 [3,0; 3,5]	0,952	3,3 [3; 3,5]	3,4 [3,2; 3,6]	0,407	3,4 [3,0; 3,6]	3,5 [3,1; 3,7]	0,5
ChQOF, %	54 [47; 59,7]	55,7 [47;61,4]	0,017	53,9 [43,7;56,4]	55,4 [46; 59]	0,458	50,7 [45; 56,3]	48,2 [41,8; 54,3]	0,011
E/A	0,81 [0,73;0,89]	0,8 [0,6; 0,9]	0,9	0,86 [0,7; 0,88]	0,8 [0,7;0,9]	0,585	0,84 [0,8; 1,1]	0,83 [0,7; 0,9]	0,831

Munozara

Olingan natijalar tinfarktdan keyingi davridagi bemorlardastentlash orqali amalga oshirilgan revaskulyarizatsiyaning ChQOF dinamikasiga sezilarli ijobiy ta’sir etishi aniqlandi. Tadqiqotimizda TR guruhi bemorlarida ChQOFning ishonchli darajada yaxshilanishi kuzatilib, noto‘liq revaskulyarizatsiyada natijalar ijobiy ko‘rinishga ega bo‘lsada ammo statistik ishonchlilik qayd etilmadi va RB guruhlarda esa CHQOF pasayganligini ko‘rish mumkin. Bu holat shikastlangan toj tomirlarning to‘liq anatomik revaskulyarizatsiyasi miokardning ishemik segmentlari perfuziyasini tiklash va shu orqali chap qorinchani funksional qayta modellashtirish jarayonini kuchaytirishdagi muhim o‘rnini yana bir bor tasdiqlaydi [4,6,9,11].

Xalqaro tadqiqot natijalari bilan solishtirilganda, bizning topilmalarimiz bir qator ilgari o‘tkazilgan tadqiqotlar bilan mos keladi. Masalan, STICH va COMPLETE kabi yirik klinik

tadqiqotlarda ham anatomik yoki funktsional jihatdan amalga oshirilgan to‘liq revaskulyarizatsiya yurak yetishmovchiligining rivojlanish xavfini kamaytirish va ChQOFni saqlab qolish bo‘yicha ijobiy samaradorlik ko‘rsatgan. Xususan, to‘liq revaskulyarizatsiya o‘tkazilgan bemorlarda yurak ishemiyasining davomiyligining qisqarishi natijasida miokardning qisqarish funksiyaning yaxshilanishi qayd etilgan [5,17].

Bizning tadqiqotda RB guruhidagi bemorlar orasida ChQOFning ahamiyatli darajada pasayganligi kuzatildi. Bu holat davolovchi taktikada revaskulyarizatsiyaning ahamiyatini yana bir bor tasdiqlaydi. Shu bilan birga, NTR guruhida ChQOFning nisbatan barqarorligi yoki past darajadagi yaxshilanishi yurak tomirlarining qisman ochilishi fonida koronar zaxira yetarli tiklanmaganligini anglatadi [18, 19].

Shuni alohida ta’kidlash lozimki, revaskulyarizatsiya boshlangan davr (miokard infarktidan keyingi kunlar soni) ham natijalarga ta’sir qiluvchi muhim omil bo‘lishi mumkin. Tadqiqotimizda TR guruhi bemorlarida ushbu davr nisbatan erta boshlangan bo‘lib, bu ham funktsional natijalarning yaxshiroq bo‘lishiga turtki bo‘lgan bo‘lishi mumkin. Kechiktirilgan reavaskulyarizatsiya esa, qayta tiklanish imkoniyatlarini cheklaydi, ayniqsa nekrotik o‘choklar keng bo‘lganda yanada axamiyatli bo‘ladi [1,4,19].

Ayrim cheklovlarni ham e’tiborga olish zarur: masalan, bemorlarning dorilari qabul qilishga rioya qilish darajasi va yurakni qo‘llab-quvvatlovchi davo sifati funksional natijalarga bevosita ta’sir qilishi mumkin. Bundan tashqari, bemorlar orasida individual koronar tomir shikaslanishidagi anatomik farqlar ham stentlash samaradorligiga ta’sir ko‘rsatadi [20,21].

Umuman olganda, tadqiqotimiz natijalari TR postinfarkt bemorlarda yurakning sistolik funksiyasini tiklashda ustunligini ko‘rsatdi va u uzoq muddatli prognozni yaxshilash uchun afzal usul sifatida qaralishi lozimligini tasdiqlaydi. Kelajakdagi tadqiqotlar esa, funktsional miokardni aniqlash va optimal revaskulyarizatsiya strategiyalarini tanlashda yangi yondashuvlarni ishlab chiqishga yo‘naltirilishi kerak.

Xulosa qilib shuni aytish mumkinki, infarktdan keyingi davrda bo‘lgan bemorlarda stentlash amaliyoti orqali bajarilgan shikastlangan koronar tomirlarning to‘liq anatomik revaskulyarizatsiyasi chap qorinchaning otish fraksiyasi (ChQOF) ko‘rsatkichlarining ijobiy dinamikasiga sezilarli darajada ta‘sir qiladi.

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Authors’ contribution.

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The study was conducted in accordance with the Declaration of Helsinki and was approved by the Republican Specialized Scientific-Practical Medical Center of Cardiology (RSSPMCC).

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Data Availability Statement

Statement All data sources used are listed in the references section.

Rahmatnomalar

Mualliflar ushbu ilmiy ishni amalga oshirishda yordam bergan Respublika ixtisoslashtirilgan kardiologiya ilmiy-amaliy tibbiyot markazining Yurak aritmiyalari laboratoriyasi va intervension kardiologiya bo‘limi xodimlariga chuqur minnatdorchilik bildiradilar. Tadqiqot jarayonida bemorlar ma’lumotlarini tahlil qilish va klinik kuzatuvlarni yuritishda ko‘rsatgan texnik va diagnostik yordami uchun Funksional diagnostika bo‘limi mutaxassislariga, shuningdek, statistik tahlil vavizualizatsiya bosqichida maslahat bergan tibbiy axborot texnologiyalari bo‘limiga minnatdorchilikizhor qilinadi. Mualliflar, shuningdek, ilmiy rahbarlar sifatida metodologik yo‘nalish va loyiha boshqaruviga hissa qo‘shgan R. D. Kurbanov va N. U Zakirovga alohida rahmat aytadilar.

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Conflict of interest

The authors declare that they have no conflict of interest.

Qisqartmalar

AAF/ARA	Angiotenzin aylantirivchi ferment/Angiotenzin reseptori antogonisti
ARNI	Angiotenzin retseptor neprelizin ingibitori
KAG	Koronaroangiografiya
TVI	Tana vazn indeksi
TR	To‘liq revaskulyarizatsiya
NTR	Noto‘liq revaskulyarizatsiya
RB	Revaskulyarizatsiya bo‘lmagan
SYNTAX	Synergy Between PCI with TAXUS and Cardiac Surgery
MI	Miokard infarkti
YQTK	yurak-qon tomir kasalliklari
YDO‘	Yakuniy diastolik o‘lcham
YSO‘	Yakuniy sistolik o‘lcham
QATQ	Qorinchalararo to‘siq qalinligi
ODQ	Orqa devor qalinligi
ChQMM	Chap qorincha miokard massasi
iChQMM	Indekslangan chap qorincha miokard massasi
YDH	Yakuniy diastolik hajm
YSH	Yakuniy sistolik hajm
iYDH	Indekslangan yakuniy diastolik hajm
iYSH	Indekslangan yakuniy sistolik hajm
ChB	Chap bo‘lmacha
O‘Q	O‘ng qorincha
ChQOF	Chap qorincha otish fraksiyasi
E, A	Diastolik to‘ldirish fazalaridagi transmitral oqim tezligi

Adabiyot

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