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Шавази Наргиз Нуралиевна

DSc, доцент, заведующая кафедрой акушерства и гинекологии N 3 СамГМУ. <https://orcid.org/0000-0001-7859-9955>

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доктор медицинских наук, профессор Ташкентский государственный медицинский университет **ORCID ID:** 0000-0002-9235-1742

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ORCID ID: 0000-0002-5409-4327.*

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ABDURAHMONOV Ma'mur Mustafaevich

DSc., professor.

Bukhara State Medical Institute named after Abu Ali Ibn Sino


UMEDOV Xushvaqt Alisherovich

PhD. Senior lecturer

Samarkand State Medical University

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ABSTRACT

To assess the degree of immunodeficiency in acute destructive pancreatitis. This study is based on the results of a prospective examination of 97 patients with acute pancreatitis who were treated in the surgical departments of the Samarkand branch of republican research center of emergency medicine from 2020 to 2025. The diagnostic and therapeutic procedures were carried out in accordance with the protocols for the diagnosis and treatment of acute pancreatitis. In the destructive form of acute pancreatitis, the absolute number of T-lymphocytes decreased from 0.97 ± 0.03 to 0.43 ± 0.06 g/l, and in percentage terms - from 55.9% to 50.9%. This indicates a pronounced immunodeficiency due to a reduction in T-helpers. The slight decrease in T-suppressors was not statistically significant. The number of NK cells remained within normal limits. The immunoregulatory index (IRI) decreased significantly, indicating marked cellular immunodeficiency. No statistically significant changes were observed in the phagocytic component. Circulating immune complexes (CIC) were slightly reduced at the time of examination. The nature and degree of immunodeficiency are directly related to the severity of the disease. It should be noted that there is a correlation between the level of immunodeficiency and the volume of pancreatic necrosis. As evidence of this relationship, the simultaneous manifestation of two processes - the formation of pancreatic necrosis foci and the appearance of signs of immunodeficiency was observed within the first 48 hours after the onset of acute pancreatitis.

Key words: acute pancreatitis, immunodeficiency, hard course.

ABDURAHMONOV Ma'mur Mustafaevich

DSc., professor Abu Ali Ibn Sino nomidagi Buxoro davlat tibbiyot institute

UMEDOV Xushvaqt Alisherovich

PhD., katta o'qituvchi

Samarqand Davlat tibbiyot Universiteti

O'TKIR DESTRUKTIV PANKREATITDA IMMUN TIZIMNING HOLATINI BAHOLASH

ANNOTATSIYA

O'tkir destruktiv pankreatitda immunodefitsit holatining darajasini baholash. Mazkur tadqiqot ishi 2020-2025-yillarda RShTYoIM Sf xirurgiya bo'limlarida davolangan o'tkir pankreatit bilan og'rikan 97 nafar bemorni prospektiv tekshiruv natijalariga asoslangan. O'tkir pankreatit diagnostikasi va davolash protokollariga muvofiq olib borildi. O'tkir pankreatitning destruktiv shaklida T-limfotsitlarning mutlaq miqdori $0,97 \pm 0,03$ dan $0,43 \pm 0,06$ g/l kamaygan, foiz ko'rsatkichida esa **55,9 dan 50,9%** gacha kamaygan. Bu esa **T-xelperlarning** kuchli immunodefitsitni ko'rsatadi. T-supressorlarning biroz kamayishi statistik ahamiyatga ega emas edi. NK-hujayralar miqdori esa me'yor darajasida qoldi. Immunoregulyator indeks (IRI) sezilarli darajada kamaydi, bu esa yaqqol hujayraviy immunodefitsitni ko'rsatadi. Fagotsitoz bo'g'inida statistik jihatdan ahamiyatli o'zgarishlar aniqlanmadi. Aylanib yuruvchi immun komplekslari (AYIK) tekshiruv vaqtida biroz kamaygan holatda qayd etildi. Immunodefitsitning xarakteri va darajasi kasallikning og'irlik darajasiga bevosita bog'liq. Immunodefitsitning darajasi va oshqozon osti bezidagi nekroz hajmi o'rtasida bog'liqlik mavjudligi qayd etilishi lozim. Bunday bog'liqlikning isboti sifatida o'tkir pankreatit boshlanganidan keyingi dastlabki 48 soat ichida jarayonlarning pankreonekroz o'choqlarini shakllanishi va immunodefitsit belgilarining bir vaqtda namoyon bo'lishi kuzatildi.

Kalit so'zlar: O'tkir pankreatit, immunodefitsit, og'ir kechishi.

АБДУРАХМОНОВ Маъмур Мустафаевич

DSc. профессор

Бухарский государственный медицинский институт имени Абу Али Ибн Сина

УМЕДОВ Хушвакт Алишеревич

PhD. старший преподаватель.

Самаркандский Государственный медицинский университет

СОВРЕМЕННАЯ КЛИНИКО-МОРФОЛОГИЧЕСКАЯ КЛАССИФИКАЦИЯ ОСТРОГО ПАНКРЕАТИТА И ЕГО ОСЛОЖНЕНИЙ

АННОТАЦИЯ

Оценить степень иммунодефицитного состояния при остром деструктивном панкреатите. Данное исследование основано на результатах перспективного обследования 97 пациентов, лечившихся в 2020–2025 годах в хирургических отделениях Сф РНЦЭМП с диагнозом острый панкреатит. Диагностика и лечебно-диагностические мероприятия проводились в соответствии с протоколами диагностики и лечения острого панкреатита. При деструктивной форме острого панкреатита абсолютное количество Т-лимфоцитов снизилось с $0,97 \pm 0,03$ до $0,43 \pm 0,06$ г/л, а в процентном отношении - с 55,9 до 50,9%. Это свидетельствует о выраженном иммунодефиците за счет уменьшения Т-хелперов. Незначительное снижение Т-супрессоров не имело статистической значимости. Количество НК-клеток оставалось в пределах нормы. Иммунорегуляторный индекс (ИРИ) значительно снизился, что указывает на выраженный клеточный иммунодефицит. В звене фагоцитоза статистически значимых изменений не выявлено. Циркулирующие иммунные комплексы (ЦИК) на момент обследования были слегка снижены. Характер и степень иммунодефицита напрямую зависят от тяжести заболевания. Следует отметить наличие взаимосвязи между уровнем иммунодефицита и объемом некроза поджелудочной железы. Доказательством такой связи является одновременное проявление двух процессов формирования очагов панкреонекроза и признаков иммунодефицита в первые 48 часов от начала заболевания.

Ключевые слова: острый панкреатит, иммунодефицит, тяжёлое течение.

Dolzarbli. O'tkir destruktiv pankreatitni muammosi dolzarbli kasallanishning 5-10% ga barqaror o'sishi bilan bog'liq bemorlarning 15-20% o'tkir pankreatitning og'ir shakllari uchraydi. Shulardan 40-70% bemorlarda pankreonekroz infisirlanish bilan asoratlanadi, bu esa o'z navbatida

o'lim ko'rsatgichi 80% tashkil qiladi [1, 2]. O'tkir pankreatitning og'ir shaklini erta aniqlash murakkabligini taxminan 150 ga yaqin laborator testlar va prognoz baholash shkalalari mavjudligi, bundan tashqari, ko'plab instrumental usullar isbotlaydi. Har yili o'tkir pankreatitni aniqlash va og'irlik darajasini baholashning yangi-yangi usullari ishlab chiqilmoqda, bu esa amaliyotdagi shifokorlarning mavjud usullardan qoniqmasligi bilan izohlanadi [3, 4].

O'tkir destruktiv pankreatitda ikkilamchi immunodefitsit holatini baholashda immunologik tadqiqotlarning roli ortib bormoqda. So'nggi yillardagi adabiyotlarda qorin bo'shlig'ining o'tkir yallig'lanish kasalliklarida immun tizim omillarini o'rganishga bag'ishlangan ko'plab ilmiy maqolalar keltirilgan. Intraabdominal yallig'lanish kasalliklariga chalingan bemorlarning immun parametrlarini o'rganish natijalari immun tizimida turli buzilishlar mavjudligini ko'rsatadi; bu buzilishlar kasallikning borishiga sezilarli ta'sir ko'rsatadi, yallig'lanish jarayonining davom etishiga va reparator jarayonlar samaradorligining pasayishiga sabab bo'ladi [5, 6]. Boshqa tadqiqotchilar esa bemorlardagi immun tizimdagi buzilishlar kasallikning destruktiv shakllari va qorin bo'shlig'i a'zolarida bajarilgan operatsiyalardan keyingi yiringli-septik asoratlarning rivojlanishida yetakchi omillardan biri ekanligini ta'kidlaydilar. Ayrim tadqiqotchilar fikricha, operatsiyadan keyingi kasallik natijasi organizmning immun va adaptatsion reaksiyalariga bog'liq. O'tkir pankreatitning (O'P) asosiy patogenetik mexanizmlaridan biri bu yallig'lantiradigan va yallig'lantirishga qarshi sitokinlari o'rtasidagi muvozanatning buzilishidir. Kasallikning boshlang'ich bosqichi, ya'ni «giperyallig'lanish» fazasida, yallig'lantiradigan sitokinlarining keskin ajralishi kuzatiladi, bu esa shok rivojlanishiga va erta a'zolar yetishmovchiligi sindromining shakllanishiga olib keladi [7, 8]. Kasallikning dastlabki 1-3 sutkalarida organizmning nospetsifik rezistentlik omillari safarbar qilinadi, yallig'lanish jarayoni rivojlanadi, fagotsitoz qiluvchi hujayralar faollashadi va yallig'lantiradigan sitokinlarining yuqori konsentratsiyalari sintez qilinadi. Kasallikning 4-5 sutkalaridan boshlab esa kompensator yallig'lanishga qarshi javob reaksiyasi boshlanadi, bu esa immunokompleks hujayralarning funksional faolligining pasayishi bilan kechadi. Immun hujayralar faolligining bunday pasayishi «immun falaj» davri deb ataladi [9]. O'tkir destruktiv pankreatit (O'DP) bilan og'irgan bemorlarda immun javobning dastlabki buzilishi «immun falaj» rivojlanishiga olib keladi, bunda na nospetsifik, na hujayraviy va na gumoral immunitet bo'g'inlari yetarli darajada ishlay olmaydi. Natijada yallig'lanishga qarshi kurashish susayadi. Immunopatologik buzilishlar tizimli yallig'lanish javobi sindromi (TYJS) rivojlanishi bilan yanada og'irlashadi, bu esa hayot uchun muhim bo'lgan a'zolarining (o'pka, miokard, jigar, buyraklar, ichak) sitokinlar orqali zararlanishiga olib keladi [10].

Shunday qilib, o'tkir pankreatitning immunopatogenezi bezning zararlanish darajasi hamda bemorning dastlabki immunoreaktivligi holati bilan bog'liq.

Tadqiqot maqsadi. Og'ir o'tkir pankreatitda immunodefitsit holatining darajasini baholash.

Material va usullar. Mazkur tadqiqot ishi 2020-2025-yil RShTYoIM Sf xirurgiya bo'limlarida davolangan o'tkir pankreatit bilan og'irgan 97 nafar bemorni perspektiv tekshiruv natijalari asoslangan.

Bemorlar yoshi, jinsi, etiologiyasi, shifoxonaga yotqizish muddatlari va shifoxonaga etkazish bo'yicha taqsimladik. Tadqiqotimizdagi bemorlar 34,1% va 65,9% ni katta yoshdagi erkaklar va ayollardan iborat bo'lib, ularning o'rtacha yoshi 48-50 yoshlarni tashkil qiladi. O'tkir destruktiv pankreatitga olib kelgan omillarning 20,4% holatlarida alimentar faktorlar, 42,8 % spirtli ichimliklarni ko'p iste'mol qilish, 14,8% hollarda esa me'da osti bezi sekresiyasining evakuatsiyasi buzilishi va 12,2% esa o't tosh kasalliklari tashkil qiladi. Bemorlarning 10,4% kriptogen sababli yuzaga keladigan o'tkir destruktiv pankreatit hisoblanmoqda.

O'tkir pankreatit diagnostikasi va davolash protokollariga muvofiq, davolash-diagnostika jarayoni olib borildi.

Bemorlar holatining dastlab og'irligini baholash uchun murojaat qilinganidan so'ng 24 soat davomida Ranson shkalasi qo'llanildi. Kasallik dinamikasida barcha bemorlarda tizimli yallig'lanish reaksiyasi sindromi belgilarining mavjudligi baholandi. Instrumental usullar yordamida oshqozon osti bezi, qorin parda orti sohasi va qorin bo'shlig'idagi o'zgarishlar xususiyati va tarqalganlik darajasi aniqlandi.

Oshqozon osti bezi, billiar tizim, qorin va plevra bo'shlig'i holatini baholashning majburiy skrining usuli ikki o'lchovli «Mindray» (Yaponiya) apparatida 3,5 MHz chastotali konveks datchik orqali ultratovush tekshiruvi o'tkazildi. Ko'rsatmalar bo'yicha E. J. Balthazarning ballik baholash tizimi asosida qorin bo'shlig'ining KT-angiografiyasi o'tkazildi. Barcha bemorlarga an'anaviy davo - infuzion, spazmolitik, antisekretor va antibiotik terapiya buyurildi. Tadqiqotga 24 dan 78 yoshgacha bo'lgan bemorlar kiritilgan. Kasallarning immun holati 1-3-5 kunlarida baholandi. Limfotsitlar fenotipi CD3, CD4, CD8 retseptorlarini aniqlash orqali, sichqon monoklonal antitanachalari yordamida bilvosita ftuorestsent usulda «Lyumam I-1» mikroskopida o'rganildi. A, M, G sinfidagi zardob immunoglobulinlari konsentratsiyasi immunopretsipitatsiya usuli bilan aniqlangan. Aylanayotgan immun komplekslar (AİK) miqdori polietilenglikol 6000 (PEP-6000) eritmasida pretsipitatsiya va 450 nm to'lqin uzunligida fotometriya orqali o'lchandi. Periferik qon fagotsitoz qiluvchi hujayralarining funksional faolligi oqim sitometriyasi yordamida aniqlangan. «Lateks-testi» yordamida fagotsitar indeks (FI) - fagotsitoz qiluvchi hujayralar foizi, va fagotsitlangan zarrachalar o'rtacha soni hisoblandi. «NST-testi» orqali sitoplazmasida tiklangan diformazanning ko'k granulalariga ega bo'lgan hujayralar ulushi aniqlangan. Tadqiqot ma'lumotlarning normal taqsimlanganligi Shapiro-Uilk testi bilan baholandi. Normal taqsimlanish va dispersiyalar tengligi tasdiqlansa, farqlarni statistik ahamiyatlilik bo'yicha St'yudent mezoni bilan baholash amalga oshirildi. Hisob statistikasi $M \pm m$ ko'rinishida keltirilgan, bu erda M-o'rtacha qiymat, m-o'rtacha arifmetik xatolikdir. $r < 0,05$ bo'lganda farqlar statistik jihatdan muhim deb qabul qilindi. Ikkilamchi immun yetishmovchiligi belgilari - faringit, tonsillit, sinusit, sistit kabi surunkali infeksiya o'choqlari ko'rinishida 37,2%, bemorlar o'tkir destruktiv pankreatit bilan og'riganligi aniqlandi. Ba'zi bemorlar avval ichak disbakteriozi (ID) 19,05%, va tez-tez uchraydigan O'RK (o'tkir respirator kasallik) 33,2% sababli davolangani aniqlandi. Ikkilamchi immunodefitsit og'irroq kechishning ehtimoliy sabablaridan biri bo'lishi mumkin, chunki bunday bemorlarda tabiiy immun rezistentlik mexanizmlari susaygan bo'ladi. O'tkir pankreatitning destruktiv shaklida T-limfotsitlarning mutloq miqdori $0,97 \pm 0,03$ dan $0,43 \pm 0,06$ g/l kamaygan, foiz ko'rsatkichida esa 55,9 dan 50,9% gacha kamaygan. Bu esa T-xelperlarning kuchli immunodefitsitni ko'rsatadi. T-supressorlarning biroz kamayishi statistik ahamiyatga ega emas edi. NK-hujayralar miqdori esa me'yor darajasida qoldi. Immunoregulyator indeks (IRI) sezilarli darajada kamaydi - $0,54 \pm 0,05$ g/l bu esa yaqqol hujayraviy immunodefitsitni ko'rsatadi. Fagotsitoz bo'g'inida statistik jihatdan ahamiyatli o'zgarishlar aniqlanmadi. Aylanib yuruvchi immun komplekslari (AYIK) tekshiruv vaqtida biroz kamaygan holatda qayd etildi. Gumoral bo'g'inda IgA darajasining yuqoriligi ($2,60 \pm 0,89$ g/l) e'tiborni tortadi bu yallig'lanish reaksiyasining preduktori hisoblanadi. IgM va IgG esa me'yorning quyi chegarasi atrofida bo'lib, kasallikning nisbatan qulay kechishidan darak beradi (1-jadval). Kasallikning 5-sutkasida T-limfotsitlar darajasi biroz oshgan - $29,36 \pm 3,09$ g/l ammo hali ham $39,34$ g/l darajada yetishmovchilik saqlanib, depressiyaning 2-darajasi qayd etildi. T-xelperlar $17,28 \pm 1,26$ g/l gacha oshgan bo'lsa-da, ularning yetishmovchiligi $45,89$ g/l darajada qoldi (T-xelper). T-supressorlar $20,83 \pm 1,02$ g/l gacha oshgan, ammo 1-darajali yetishmovchilik saqlanmoqda. T-limfotsitlar o'rtasidagi nisbatlar o'zgarishi tufayli IRI $0,83 \pm 0,07$ g/l gacha ko'tarildi. Gumoral bo'g'inda IgA ($2,90 \pm 0,72$ g/l) va IgM ($1,66 \pm 0,78$ g/l) miqdori oshgan, IgG esa biroz kamaygan ($10,98 \pm 1,06$ g/l).

1-jadval. O'tkir destruktiv pankreatit bilan og'rigan bemorlarda qabul vaqtida immun holat ko'rsatgichlari

Ko'rsatgichlar	Normal holat T-limfotsitlar miqdori g/l	Destruktiv shaklidagi bemorlarda T-limfotsitlar miqdori g/l
T-limfotsit, CD3,	$0,97 \pm 0,03$	$0,43 \pm 0,06^*$
T-limfotsit, CD3,	$48,40 \pm 1,40$	$23,20 \pm 2,15^*$
T-xelper, CD4,	$31,94 \pm 1,40$	$15,30 \pm 1,74^*$
T-supressor, CD8,	$30,51 \pm 1,10$	$27,15 \pm 2,09^*$
NK-hujayra, CD16,	$16,84 \pm 0,83$	$16,85 \pm 1,14$

IRI	1,07±0,05	0,54±0,05*
FI	68,23±5,08	61,36±3,84
FCh	9,38±0,86	7,78±1,06
NST-test	8,76±0,93	9,74±1,52
SIK	26,17±2,61	23,14±2,30
IgA,	1,51±0,09	2,60±0,89
IgG,	10,33±0,36	11,20±1,48
IgM,	1,20±0,06	1,54±0,33

Izoh: * — nazorat guruhi bilan solishtirilganda farqning ishonchliligi.

Bemorni uyiga chiqarish vaqtida T-limfotsitlar darajasi me'yorga yaqinlashgan (37,80±4,30 g/l), T-xelperlar (25,70±3,14 g/l) va T-supressorlar (27,05±2,06 g/l) ko'rsatkichlari oshishda davom etgan; IRI ham ko'tarilgan bo'lsa-da, hali me'yor darajasiga etmagan - 0,95±0,08 g/l. NK-hujayralar, NST-testi, FI va FCh ko'rsatkichlarida dinamikada sezilarli o'zgarishlar aniqlanmadi.

Gumoral bo'g'inda IgA (2,41±0,50g/l) va IgG (10,73±1,28 g/l) darajalari pasaygani, IgM (1,82±0,58 g/l) esa ko'tarilganligi qayd etildi.

Xulosa sifatida, kasallikning yakuniy natijasi oshqozon osti bezidagi shikastlanishga organizmning yallig'lanish reaksiyasi qanchalik adekvat bo'lishiga bog'liq (2-jadval).

2-jadval. O'tkir destruktiv pankreatit bilan og'irgan bemorlarda immun holat ko'rsatkichlarining dinamikasi

Ko'rsatg ichi	Kelgan vaqti	Ketgan vaqti		
	T-limfotsitlar miqdori g/l	5-sutka	7-sutka	T-limfotsitlar miqdori g/l
T-limfotsit CD3	23,20±2,15*	29,36±3,09*1	32,13±4,22*1	37,80±4,30*12
T-xelper CD4	15,30±1,74*	17,28±1,26*	20,60±2,71*1	25,70±3,14*12
T-supressor, CD8	20,15±2,09*	20,83±1,02*	23,78±1,43*2	27,05±2,06*12
NK-hujayra CD16,	16,85±1,14	16,72±1,09	15,38±0,65	14,52±0,53*12
IRI	0,76±0,04*	0,83±0,07*	0,87±0,06*1	0,95±0,08
FI	61,36±3,84	56,38±2,74*	52,40±1,77*1	48,05±1,24*123
FCh	7,78±1,06	9,20±0,99	6,14±0,44*12	4,92±0,36*123
NST-test	9,74±1,52	9,32±1,09	5,41±0,62*12	5,32±0,59*12
SIK	23,14±2,30	25,18±3,68	23,22±2,21	25,70±4,86

Izoh:

*- me'yoriy ko'rsatkichlardan farqning ishonchliligi.

** - qabul (1-sutka) ko'rsatkichlaridan farqning ishonchliligi.

*** - 5-sutkadagi ko'rsatkichlardan farqning ishonchliligi.

**** - 7-sutkadagi ko'rsatkichlardan farqning ishonchliligi.

Xulosa. Immunodefitsitning xarakteri va darajasi kasallikning og'irlik darajasiga bevosita bog'liq. Immunodefitsitning darajasi va oshqozon osti bezidagi nekroz hajmi o'rtasida bog'liqlik mavjudligi qayd etilishi lozim. Bunday bog'liqlikning isboti sifatida o'tkir pankreatit boshlanganidan

keyingi dastlabki 48 soat ichida jarayonlarning pankreonekroz o'choqlarini shakllanishi va immunodefitsit belgilarini bir vaqtda namoyon bo'lishi kuzatiladi. Aniqlangan sitokin faolligi amaliyotdagi jarroh tomonidan immunokorreksiyalovchi terapiyani tanlash va uni o'tkazish maqsadga muvofiqligini asoslashda hisobga olinishi lozim.

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