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USE OF DAA IN PATIENTS WITH HCV-ASSOCIATED LIVER DAMAGE

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Abstract
190 patients were observed, including 135 with a diagnosis of chronic hepatitis C (CHC) and 55 with a diagnosis of viral liver cirrhosis. Of these, 103 patients had genotype 1b, 48 had genotype 1a, 16 had genotype 3a, 10 had genotype 3a/b, and 13 had genotype 2. All patients underwent quantitative HCV viral load determination using PCR. The level of liver fibrosis was also determined using a non-invasive method called fibroscan. Patients were prescribed direct-acting antiviral drugs (DAA) for antiviral therapy.

Keywords: Chronic hepatitis C, liver cirrhosis, direct-acting antiviral drugs, fibroscan.

Introduction

Relevance of the problem. Chronic diffuse liver diseases, primarily viral infections, are one of the most pressing issues in modern hepatology. Hepatotropic viruses cause chronic liver inflammation with the development of fibrosis. Severe fibrosis, in turn, disrupts the organ's architecture, leading to the development of cirrhosis.

Currently, liver biopsy is considered the "gold standard" for diagnosing fibrosis. However, data published in recent years demonstrate the effectiveness of non-invasive methods for diagnosing liver fibrosis, particularly liver elastography, which closely corresponds to the stage of fibrosis based on liver biopsy results.

The advantages of liver elastography include the following: simplicity, absence of contraindications, high diagnostic accuracy at various stages of liver fibrosis, the ability to assess fibrosis dynamics, ease of use, screening, accessibility, and informativeness. Today, the European Association for the Study of the Liver (EASL) recommends the use of direct-acting antiviral drugs (DAAs) in the treatment of chronic hepatitis C. These are pangenotypic nucleotide inhibitors of the RNA-dependent RNA polymerase NS5B of the hepatitis C virus. The course of treatment is short (usually 12 to 24 weeks), depending on the presence or absence of cirrhosis.

Study Objective:

To study the antiviral effect of HCV-associated liver disease in outpatients.

Materials and Methods

The study was conducted among patients who presented to the Hepatology Center of the Samarkand Regional Clinical Infectious Diseases

Hospital with a diagnosis of chronic viral hepatitis C (CHVHC) (135 patients) and compensated

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liver cirrhosis (CLC) due to HCV (55 patients).

All patients underwent a comprehensive clinical and epidemiological examination. Blood biochemistry included determination of bilirubin levels, AST, and ALT activity. To determine the degree of fibrosis, a noninvasive liver examination method, elastometry, was performed using the Fibroscan device. A liver section free of vascular structures (OL = more than 5 mm) and of homogeneous structure was selected for examination. The sensor's focusing zone ranged from 25 mm to 65 mm from the skin surface. The resulting value was expressed in kilopascals.

To establish a diagnosis, serological ELISA was used to detect HbSAg, Anti-HCV, and Anti-HDV markers. Of the total number of patients, 62 (32.6%) had newly detected Anti-HCV. PCR diagnostics were also used to test the HCV viral load and determine the genotype.

Study Results

The age distribution of patients was dominated by adults, primarily males—129 (68%). Our data show that people aged 41–50 years are most susceptible to CHC—63 (33.1%). This figure was higher than for those aged 0–20 years, where it was 2.1% (Table 1).

Таблица1.ВозрастнаяструктурабольныхХГС

Age groups	Number of patients	Number of patients in %
0-20	4	2,1
21-30	33	17,4
31-40	48	25,3
41-50	63	33,1
51-60	24	12,6
Over 60 yearsold	18	9,5
Total:	**190**	**100%**

Chronic viral hepatitis C lasting 1-5 years was recorded in 58 patients, 5-20 years in 77 patients, and more than 20 years in 55 patients. Among patients who underwent parenteral interventions, the following interventions were of significant epidemiological significance: dental services - 14.2%, blood transfusion - 12.1%, surgeries - 32.1% (appendectomy, herniotomy, hysterectomy, echinococcosis, cesarean section), intravenous and intramuscular injections - 19%, and in 22.6% of cases we were unable to determine the cause.

Among patients diagnosed with compensated CPVHS, 20.5% experienced nosebleeds of varying severity and frequency. Signs of portal hypertension of varying degrees were found in 28.9%. Ascites was not detected clinically or instrumentally, but hepatomegaly was present in 39.5%. Splenomegaly and extrahepatic signs (telenectasia, palmar erythema) were detected in 22.6%.

Polymerase chain reaction (PCR) was used to determine the genotypes of all patients. The results of PCR genotyping showed the predominance of genotype 1: 103 patients had genotype 1b and 48 patients had genotype 1a. Genotype 3 was the second most common genotype, with genotype 3a in 16 patients and genotype 3a/b in 10 patients. Genotype 2 was detected in only 13 cases, while genotype 4 could not be identified. Quantitative determination of HCV RNA in the blood using polymerase chain reaction with a linear range of 15–100,000,000 IU/ml revealed the following

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indicators (Table 2).

Table 2. Quantitative determination of HCV RNA

Viralload	Absolutenum berofpatients	Number ofpatientsin %	Amount of HCV RNA in IU/ml
$1x10^2$	8	4,9	535±108,37
$1x10^3$	4	2,4	4304,72±346,71
$1x10^4$	51	31,1	57010,98±3703,54
$1x10^5$	49	29,9	465265,3±37724,77
$1x10^6$	42	25,6	3276190,47±309370,86
$1x10^7$	10	6,1	51676534,02±37041874,2

The liver elastography data according to METAVIR in patients with chronic hepatitis C were as follows (Table 3).

Table 3. Results of fibroscanning of the liver in patients with chronic hepatitis C

Parameters	Absolutenumbe rofpatients	Number ofpatientsin %	Fibroscanresults
F0	58	30,52	4,69 ±0,1
F0–F1	32	16,84	6,31±0,05
F1	11	5,78	7,75 ±0,07
F1–F2	14	7,36	8,73 ±0,06
F2	6	3,15	9,3± 0,037
F2–F3	14	7,36	10,69±0,21
F3	13	6,84	12,65±0,22
F3–F4	20	10,52	17,88±0,49
F4	22	11,57	37,79±2,72

Fibroscanning results were consistent with clinical and laboratory data. Patients with elastometry values of F3; F3–F4 were identified as having clinical signs and laboratory data consistent with compensated cirrhosis. All patients were prescribed direct-acting antiviral drugs (DAAs) based on their genotype, in accordance with Order No. 542 of the Ministry of Health of the Republic of Uzbekistan. All patients were receiving antiviral therapy for the first time, or "naive." Thus, patients with genotypes 1a-1b were prescribed a regimen of sofosbuvir 400 mg + ledipasvir (Virpas) or sofosbuvir 400 mg + velpatasvir 100 mg (Virvel). Patients with genotypes 2 and 3 were prescribed a regimen ofsofosbuvir + daclatasvir (Mydecl + Myhep). The duration of DAA therapy for patients with chronic hepatitis C was 12 weeks, and for patients with compensated chronic hepatitis C, the same duration was 12 weeks. During treatment, viral load was determined in patients. A rapid virological response (RVR) of 98.4% was detected at week 4 of treatment. An early virological response (EVR) of 100% was also determined at week 12 of treatment. Viral load was also determined using PCR at week 24 (12 weeks after treatment). HCV RNA PCR was positive in five patients; these patients had treatment-related issues, such as self-administered discontinuation.

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Conclusions

The majority of patients in our study group were 41-50 years old (33.1%) and male (68%). Genotype 1b was predominant in our study group. Direct-acting antiviral drugs are highly effective regardless of the stage of fibrosis (RVR of 98.4%).

References

1. Anvarovna Y. N. et al. Clinical and Epidemiological Characteristics of Shigellosis in Adults at the Contemporary Stage //Central Asian Journal of Medical and Natural Science. – 2021. – Т. 2. – №. 3. – С. 311-318.
2. Rakhmonov R. N. et al. HEPATITIS C: THE CURRENT STATE OF THE PROBLEM //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2025. – Т. 3. – №. 1. – С. 339-347.
3. Rakhmonov R. N. NEW APPROACHES TO TREATING CHRONIC VIRAL HEPATITIS B //Экономикаисоциум. – 2025. – №. 9-1 (136). – С. 284-286.
4. Rakhmonov R. N., Kh V. D. RECENT DIAGNOSTIC ADVANCEMENTS IN CHRONIC VIRAL HEPATITIS B //Экономикаисоциум. – 2025. – №. 9-1 (136). – С. 281-283.
5. Sobirovna D. N., Zakirovna U. G., Abdujalolovna S. D. Post-covid syndrome in new coronavirus infection. – 2022.
6. Yakubovna E. M. et al. Aspects of Clinical and Laboratory Diagnostics of Enteroviral Infection without CMS Damage //Central Asian Journal of Medical and Natural Science. – 2021. – Т. 2. – №. 6. – С. 1-5.
7. Zhasurovich B. Z. OCCULT HBV INFECTION //SHOKH LIBRARY. – 2025.
8. Zhasurovich B. Z. PREGNANCY AND VIRAL HEPATITIS B //SHOKH LIBRARY. – 2025.
9. Ачилова М. М. БЛАСТОЦИСТ ИНВАЗИЯСИ АНИҚЛАНГАН ОИВ ИНФЕКЦИЯЛИ БЕМОРЛАРДА КАСАЛЛИКНИНГ МИКСТ КЕЧИШ ХУСУСИЯТЛАРИ // Экономика и социум. 2025. №2-1 (129).
10. Джумаева Н. С., Ярмухамедова Н. А., Узакова Г. З. Амалиётдан бир холат Covid-19 касаллиги хамрох касалликлар билан кечиш хусусиятлари //Журнал гепато-гастроэнтерологических исследований. – 2021.
11. Курбонова Л. и др. Бруселлёз билан оғриган беморларда электрокардиограмманинг ўзига хос хусусиятлари //Журнал вестник врача. – 2014. – Т. 1. – №. 1. – С. 6-7.
12. Курбонова Л., Орзикулов А., Бахриева З. Бруселлёз касаллигида юрак-қон томир тизимида бўладиган ўзгаришлар //Журнал вестник врача. – 2014. – Т. 1. – №. 1. – С. 4-6.
13. Матьякубова Ф. Э., Ибрагимова Э. Ф., Бахриева З. Д. КЛИНИКО-ЭПИДЕМИОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА ШИГЕЛЛЕЗА У ВЗРОСЛЫХ НА СОВРЕМЕННОМ ЭТАПЕ //Вестник науки и образования. – 2020. – №. 22-1 (100). – С. 64-72.
14. Орзикулов А. О. и др. Самарқанд вилояти Нуробод тумани мисолида бруцеллёз касаллиги тиббий ижтимоий оқибатларини таҳлил этиш //Научно практический журнал:«Проблемы биологии и медицины. – 2019. – №. 3. – С. 111.
15. Сувонкулов У. и др. Идентификация видовой принадлежности возбудителей кожного лейшманиоза методом полимеразной цепной реакции //Журнал проблемы биологии и медицины. – 2016. – №. 3 (89). – С. 91-92.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

16. Тиркашев О. С., Матякубова Ф. Э., Раббимова Н. Т. Клинико-эпидемиологическая характеристика кори в Самаркандской области //VOLGAMEDSCIENCE. – 2021. – С. 624-625.
17. Узакова Г. З., Ярмухамедова Н. А., Джумаева Н. С. Болаларда коронавирус инфекцияси кечишининг узига хос хусусиятлари //Журнал гепато-гастроэнтерологических исследований. – 2021.
18. Шодиева Д. А., Ташпулатов Ш. А. Критерии тяжести основного процесса при ботулизме у детей //Children's Medicine of the North-West. – 2020. – Т. 8. – №. 1. – С. 403-403.
19. Шодиева Д. А., Ташпулатов Ш. А., Джумаева Н. С. Внешнее дыхание при ботулизме у детей в зависимости от степени тяжести основного процесса //Вопросы науки и образования. – 2021. – №. 6 (131). – С. 35-43.
20. Шодиева Дилафруз Абдужалоловна, Ташпулатов Шавкат Абдурахимович, Джумаева Насиба Собировна ВНЕШНЕЕ ДЫХАНИЕ ПРИ БОТУЛИЗМЕ У ДЕТЕЙ В ЗАВИСИМОСТИ ОТ СТЕПЕНИ ТЯЖЕСТИ ОСНОВНОГО ПРОЦЕССА // Вопросы науки и образования. 2021. №6 (131).
21. Эргашева М. Я., Субхонова С. К. Анализ диагностической ценностипрокальцитонина при оценки тиеченя COVID-19//GOLDEN BRAIN.–2023 //GOLDEN BRAIN. – 2023. – Т. 1. – №. 8. – С. 60-72.
22. Эргашева Муниса Якубовна Особенности клинико-лабораторной диагностики энтеровирусной инфекции без поражения ЦНС // Достижения науки и образования. 2020. №1 (55).
23. Якубова Н. С., Джураева К. С. Изменения нервной системы при вич инфекции //Uzbek journal of case reports. – 2023. – Т. 3. – №. 3. – С. 97-100.
24. Якубова Нигина Садриддиновна, Джураева Камола Станиславовна Изменения нервной системы при вич инфекции // UJCR. 2023. №3. URL: https://cyberleninka.ru/article/n/izmeneniya-nervnoy-sistemy-pri-vich-infektsii (дата обращения: 20.11.2025).
25. ЯРМУХАМЕДОВА М. К., ЯКУБОВА Н. С., ВОСЕЕВА Д. Х. ОЦЕНКА ПРИМЕНЕНИЯ ГЕПАТОПРОТЕКТОРОВ У БОЛЬНЫХ С ХРОНИЧЕСКИМ ВИРУСНЫМ ГЕПАТИТОМ В //T [a_XW [i [S US S_S^[ůe YfcS^. – 2022. – С. 431.
26. Ярмухамедова М. К., Ярмухамедова Н. А. Оценка эффективности ПППД у больных с ВГС //Вопросы науки и образования. – 2020. – №. 22 (106). – С. 24-29.
27. Ярмухамедова М., Ачилова М., Узакова Г. Клиническая характеристика бруцеллеза в самаркандской области //Журнал проблемы биологии и медицины. – 2016. – №. 3 (89). – С. 120-123.
28. Ярмухамедова Н. А. и др. Современные аспекты и роль цитокинового статуса проблемы бруцеллеза Резюме //International Scientific and Practical conference «COVID-19 and other topical infections of Central Asia» June 23-24, 2022, Shymkent. – 2022. – С. 172.
29. Ярмухамедова Н. А., Джумаева Н. С., Восеева Д. Х. ПОСТКОВИД синдромда неврологик ўзгаришлар // UJCR. 2023. №3. URL: https://cyberleninka.ru/article/n/postkovid-sindromda-nevrologik-zgarishlar (дата обращения: 19.11.2025).
30. Ярмухамедова Н. и др. Клинико эпидемиологическое течение коклюша у детей в

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

самаркандской области //Журнал проблемы биологии и медицины. – 2016. – №. 3 (89). – С. 124-124.
31. Ярмухамедова Н. и др. Особенности течения хронического гепатита с на фоне туберкулеза //Журнал вестник врача. – 2019. – Т. 1. – №. 1. – С. 129-132.
32. Ярмухаммедова Н., Узакова Г., Раббимова Н. Особенности течения ветряной оспы у взрослых //Журнал проблемы биологии и медицины. – 2017. – №. 1 (93). – С. 155-157.
33. Ярмухамедова Н. и др. Клинико эпидемиологическое течение коклюша у детей в самаркандской области //Журнал проблемы биологии и медицины. – 2016. – №. 3 (89). – С. 124-124.
34. Ярмухамедова Н. и др. Клинико эпидемиологическое течение коклюша у детей в самаркандской области //Журнал проблемы биологии и медицины. – 2016. – №. 3 (89). – С. 124-124.
35. Ярмухамедова Н. и др. Особенности течения хронического гепатита с на фоне туберкулеза //Журнал вестник врача. – 2019. – Т. 1. – №. 1. – С. 129-132.
36. Ярмухаммедова Н., Узакова Г., Раббимова Н. Особенности течения ветряной оспы у взрослых //Журнал проблемы биологии и медицины. – 2017. – №. 1 (93). – С. 155-157.

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