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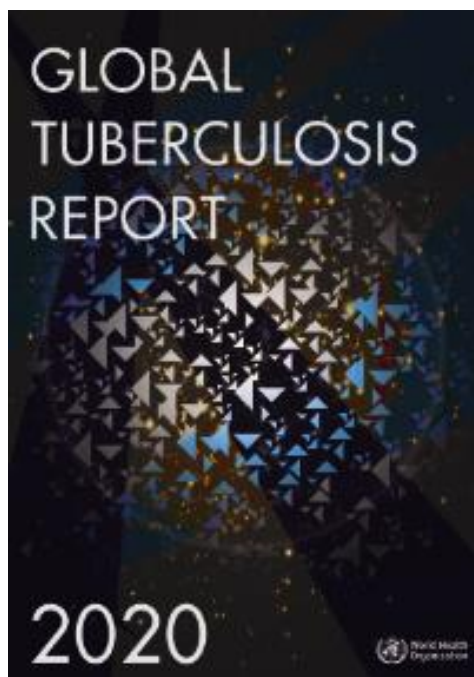


Аскар Едильбаев

Региональный офис ВОЗ-Европа

09 декабря 2020

Европейский регион ВОЗ



- Высокое бремя в странах региона ВЕЦА, более 90% МЛУ-ТБ в 7 странах RUS, UKR, KAZ, BEL, KGZ, UZB, MDA (более 1,000 зарегистрированных случаев);
- Более 70% глобального бремени ШЛУ-ТБ
- Успешное лечение МЛУ-ТБ – 59% (2017)
- Успешное лечение ШЛУ-ТБ – 39.1% (2018)

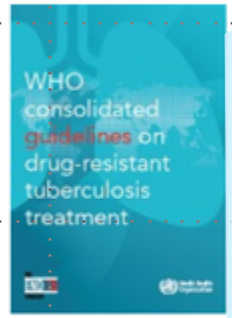
Руководство ВОЗ по лечению лекарственно-устойчивого ТБ, июнь 2020 г.

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WHO consolidated guidelines on drug-resistant tuberculosis treatment

Authors:
WHO

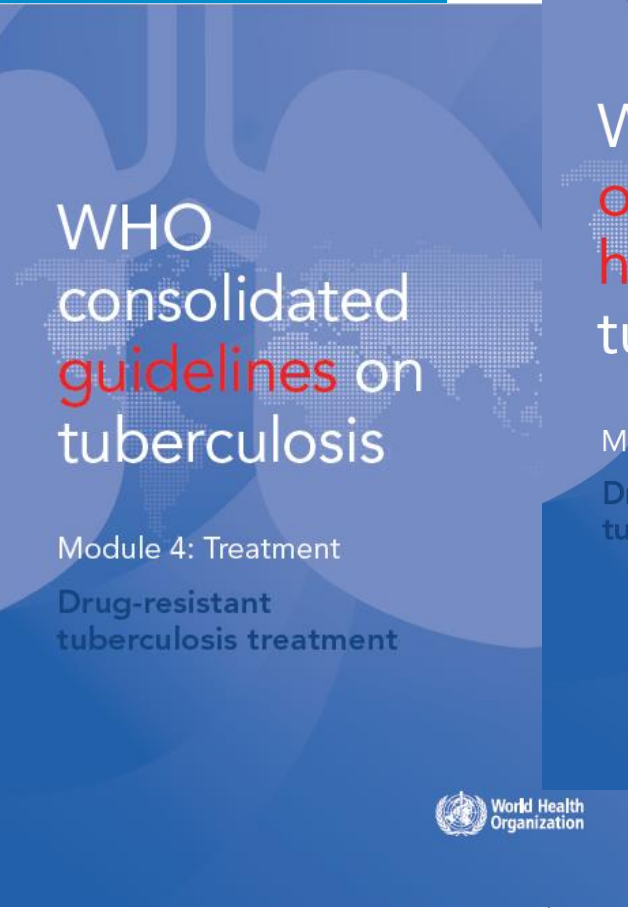


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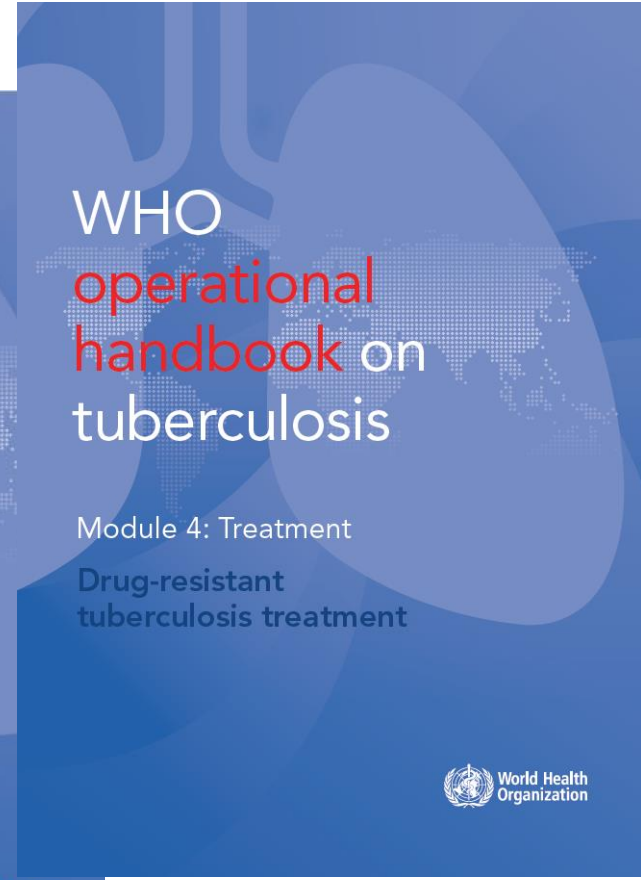

Overview

Tuberculosis (TB) strains with drug resistance (DR-TB) are more difficult to treat than susceptible ones, and threaten global progress towards the targets set by the End TB Strategy of the World Health Organization (WHO). There is thus a critical need for evidence-based policy recommendations on the treatment and care of patients with DR-TB. This handbook provides the most recent and comprehensive evidence available. In this regard, the WHO consolidated guidelines on drug-resistant tuberculosis treatment fulfil the mandate of WHO to inform health professionals in Member States on how to improve treatment and care for




WHO consolidated guidelines on tuberculosis

Module 4: Treatment
Drug-resistant tuberculosis treatment



WHO operational handbook on tuberculosis

Module 4: Treatment
Drug-resistant tuberculosis treatment



Классификация препаратов для длительных режимов лечения МЛУ-ТБ

Группа	Лекарственный препарат	Аббревиатура
Группа А Приоритетные препараты	Levofloxacin (Lfx) OR Мохифлоксацин (Mfx) Bedaquiline Linezolid	Lfx / Mfx Bdq Lzd
Группа В Добавляются к приоритетным	Clofazimine Cycloserine	Cfz Cs
Группа С Лекарства, которые включаются, когда нельзя использовать препараты из групп А и В	Ethambutol Delamanid Pyrazinamide Imipenem-cilastatin OR Meropenem Amikacin (OR Streptomycin) Ethionamide OR Prothionamide <i>p</i> -aminosalicylic acid	E Dlm Z Imi-cln / Mpn Am (S) Eto / Pto PAS

REVIEW

Prevalence of Hepatitis C Virus in Tuberculosis Patients: A Systematic Review and Meta-Analysis

Meysam Behzadifar^{1*}, Sanaz Heydarvand², Masoud Behzadifar³, Nicola Luigi Bragazzi⁴

OPEN ACCESS

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ABSTRACT

BACKGROUND: Infection with Hepatitis C Virus (HCV) increases the hepatotoxicity of anti-tuberculosis drugs. The purpose of this systematic review and meta-analysis is to determine the prevalence of HCV infection in patients with tuberculosis (TB).

METHODS: PubMed/MEDLINE, ISI/Web of Sciences, CINAHL, EMBASE, the Cochrane Library and Scopus were searched from January 2000 to March 2018. The overall prevalence of HCV in patients with TB was calculated using the random-effect model with 95% confidence interval (CI). To evaluate heterogeneity, I^2 test was used. Egger's regression test was utilized to check publication bias.

RESULTS: Twenty-one articles were selected for the final analysis based on the inclusion/exclusion criteria. A total of 15,542 patients with TB participated in the studies. The overall prevalence of HCV infection in patients with TB was 7% [95%CI: 6-9]. Subgroup analysis revealed that diagnostic test ($P=0.0039$), geographical background ($P=0.0076$) and gender distribution ($P=0.0672$) were statistically significant moderators. Men had a higher risk for HCV than women (Odds Ratio, OR=2.02; 95%CI: 1.28-3.18).

CONCLUSION: The results of this study highlighted the importance of screening HCV in TB patients. Knowing whether HCV is present or not in these patients can be helpful in effectively treating them.

KEYWORDS: Prevalence, hepatitis C virus, tuberculosis, systematic review, meta-analysis

Распространенность ВГС у больных ТБ*

- Всего в обзор было включено 15,542 больных ТБ из 21 исследования в 4 географических регионах ВОЗ: EURO, SEARO, AMRO и AFRO;
- Распространенность ВГС варьировала от 2 до 27%, общая распространенность составила 7% [95%CI:6-9];
- Скрининг на ВГС среди больных ТБ является очень важным. Информация о наличии ВГС может способствовать эффективному лечению;
- Существует необходимость внедрения срочных мер для повышения уровня знаний и скринингу лиц из групп риска по ВГС и ТБ.

*Ethiop J Health Sci. 2019 Jan; 29(1) 945-956

Распространенность ВГС у больных ТБ

First author	Year	Country	Age (Mean±SD)	Test	Prevalence	No. of participants
Richards	2006	Georgia	35	ELISA	22%	272
Kuniholm	2008	Georgia	NA	ELISA	12.00%	300
Pando	2008	Argentina	34.8±14.1	ELISA	11.80%	187
Khalili	2009	Iran	43.21±18.27	ELISA	27.45%	102
Khan	2010	UK	NA	ELISA	2.00%	245
Chien	2010	Taiwan	NA	ELISA	10%	295
Wang	2011	Taiwan	NA	PCR	6.70%	360
Reis	2011	Brazil	NA	ELISA	7.50%	402
Badawy	2011	Egypt	NA	ELISA	6.40%	135
Lomtadze	2013	Georgia	21-92	ELISA	21%	326
Akhtar	2013	Pakistan	42±18.2	ELISA	9.10%	110
Beasley	2013	UK	NA	ELISA	NA	192
Zhang	2013	China	NA	ELISA	3.80%	2296
Potter	2014	UK	37.7±15.3	ELISA	2.00%	302
Campo	2014	USA	NA	ELISA	3.60%	1421
Agha	2015	Egypt	NA	PCR	17.02%	94
Ahmadi Nooredinvand	2015	UK	NA	ELISA	1.60%	429
Abdallah	2015	Sudan	36.03± 13.3	ELISA	1%	98
Bushnell	201+5	USA	NA	ELISA	4.20%	7624
Merza	2016	Iraq	40.34±20.29	ELISA	0.90%	214
Costi	2017	Brazil	38.0± 12.9	PCR	20%	138

Association Between Hepatitis C Infection and Other Infectious Diseases: A Case for Targeted Screening?

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OBSERVATIONAL STUDY

OPEN

Hepatitis C Virus Infection Is Associated With an Increased Risk of Active Tuberculosis Disease

A Nationwide Population-Based Study

Ping-Hsun Wu, MD, Yi-Ting Lin, MD, Kun-Pin Hsieh, PhD, Hung-Yi Chuang, PhD, and Chau-Chyun Sheu, MD

Abstract: Tuberculosis (TB) and hepatitis C virus (HCV) infection contribute to major disease mortality and morbidity worldwide. However, the causal link between HCV infection and TB risk remains unclear. We conducted a population-based cohort study to elucidate the association between HCV infection and TB disease by analyzing Taiwan National Health Insurance Database. We enrolled 5454 persons with HCV infection and 54,274 age- and sex-matched non-HCV-infected persons between January 1998 and December 2007. Time-dependent Cox proportional hazards regression analysis was used to measure the association between HCV infection and active TB disease. Incidence rate of active TB disease was higher among HCV infection than in control (134.1 vs 89.1 per 100,000 person-years; incidence rate ratio 1.51; $P = 0.014$). HCV infection was significantly associated with active TB disease in multivariate Cox regression (adjusted hazard ratio [HR] 3.20; 95% confidence interval [CI], 1.85–5.53; $P < 0.001$) and competing death risk event analysis (adjusted HR 2.11; 95% CI, 1.39–3.20; $P < 0.001$). Multivariate stratified analysis further revealed that HCV infection was a risk of active TB disease in most strata. This nationwide cohort study suggests that HCV infection is associated with a higher risk of developing active TB disease.

(Medicine 94(33):e1328)

Abbreviations: CI = confidence interval, CKD = chronic kidney disease, COPD = chronic obstructive pulmonary disease, DM = diabetes mellitus, HBV = hepatitis B virus, HCV = hepatitis C virus, HIV = human immunodeficiency virus, ICD-9 = International Classification of Diseases, 9th Revision, IRR = incidence rate ratio, LHID = Longitudinal Health Insurance Database, NHI = National Health Insurance, NHIRD = National Health Insurance Research Database, TB = tuberculosis.

INTRODUCTION

Tuberculosis (TB), an infectious disease caused by *Mycobacterium tuberculosis*, is the most prevalent infectious disease and the major leading cause of death worldwide, especially in developing countries. According to the Global Tuberculosis Report by World Health Organization, there were an estimated 8.6 million incident cases of TB and approximately 1.3 million people died of TB in 2012.¹ It is endemic in south-eastern Asia, as well as Taiwan. An epidemiological study declared the incidence of active TB disease in Taiwan was 74 per 100,000 person-years.²

TB is considered as an immunodeficiency-related infection. Our recent work demonstrated that liver cirrhosis was associated with increased risk of active TB disease.³ Liver cirrhosis, and subsequent complications of both hepatitis B virus (HBV) and hepatitis C virus (HCV) infections are major health problems in Taiwan.⁴ However, a comprehensive evaluation from HCV patients without cirrhosis remains unavailable. HCV infection is one of the contributing factors for developing TB infection is our hypothesis. Previous observation study showed that HCV infection and TB share the same high risks population, especially in homeless people,⁵ prisoners,⁶ and human immunodeficiency virus (HIV) patients.⁷ Furthermore, one case-control study using the US Veterans data demonstrated that HCV infection is associated with TB disease.⁸ However, results from this hospital-based, case-control study cannot be extended to the general population. In order to fill this knowledge gap, this nationwide cohort study analyzed healthcare data to clarify the association between HCV and active TB disease using large-scale data from the Taiwan National Health Insurance (NHI).

Table 1. Comparison Between HCV-Infected Patients (Cases) and Controls Without HCV Among Hospitalized Veterans (1992–1999)

	Cases (n = 34,204)	Controls (n = 136,816)	Unadjusted Odds Ratio (95% CI)	<i>p</i>
Demographic features				
Age (mean ± SD)	48.4 ± 9.3	59.8 ± 13.4		<0.0001
Ethnicity (Caucasian)	21,039 (61.5)	100,526 (73.5)	0.6 (0.5–0.6)	<0.0001
Gender (men)	33,576 (98.2)	132,713 (97.0)	1.7 (1.5–1.8)	<0.0001
Period of service (Vietnam)	23,294 (68.1)	45,210 (33.0)	4.3 (4.2–4.4)	<0.0001
Blood-borne viral infections				
Human immunodeficiency virus	4,832 (14.1)	4,090 (3.0)	5.3 (5.1–5.6)	<0.0001
Hepatitis B	7,665 (22.4)	985 (0.7)	39.8 (37.22–42.62)	<0.0001
Hepatitis D	570 (1.7)	45 (0.03)	51.5 (38.0–69.8)	<0.0001
Infections related to immunodeficiency				
Toxoplasmosis	88 (0.3)	79 (0.06)	4.5 (3.3–6.1)	<0.0001
Cytomegalovirus	194 (0.6)	213 (0.2)	3.7 (3.0–4.5)	<0.0001
Cryptococcosis	121 (0.4)	119 (0.1)	4.1 (3.2–5.3)	<0.0001
Pneumocystosis	513 (1.5)	530 (0.4)	3.9 (3.5–4.4)	<0.0001
Kaposi sarcoma	93 (0.3)	150 (0.1)	2.5 (1.9–3.2)	<0.0001
Candida	1,382 (4.0)	2,407 (1.8)	2.4 (2.2–2.5)	<0.0001
Herpes simplex (excluding genital)	449 (1.3)	862 (0.6)	2.1 (1.9–2.4)	<0.0001
Tuberculosis	1,124 (3.3)	1,717 (1.3)	2.7 (2.5–2.9)	<0.0001
Bacterial infections				
Peritonitis	1,325 (3.9)	1,067 (0.8)	5.13 (4.7–5.6)	<0.0001
Sepsis	2,289 (6.7)	6,575 (4.8)	1.42 (1.4–1.5)	<0.0001
Endocarditis	811 (2.4)	2,052 (1.5)	1.60 (1.5–1.7)	<0.0001
Cellulitis	5,966 (17.44)	16,394 (12.0)	1.55 (1.5–1.6)	<0.0001
Carbuncles	1,172 (3.43)	3,301 (2.4)	1.44 (1.3–1.5)	<0.0001
Sexually transmitted diseases				
Gonococcus	155 (0.5)	179 (0.1)	3.47 (2.8–4.3)	<0.0001
Viral warts	1,259 (3.7)	3,037 (2.2)	1.68 (1.6–1.8)	<0.0001
Chlamydia	544 (1.6)	1,011 (0.7)	2.17 (2.0–2.4)	<0.0001
Syphilis	687 (2.0)	755 (0.6)	3.69 (3.3–4.1)	<0.0001
Genital herpes	354 (1.0)	408 (0.3)	3.50 (3.0–4.0)	<0.0001
Trichomoniasis	106 (0.3)	211 (0.2)	2.01 (1.6–2.5)	<0.0001
Molluscum	45 (0.1)	82 (0.1)	2.20 (1.5–3.2)	<0.0001

Values are n (%) unless otherwise noted.

Hepatitis C virus infection increases hepatitis risk during anti-tuberculosis treatment

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S U M M A R Y

OBJECTIVE: To study the impact of hepatitis B virus (HBV) and hepatitis C virus (HCV) co-infection on clinically significant transaminase elevation during short-course anti-tuberculosis treatment.

DESIGN: Retrospective observation study.

RESULTS: During standard anti-tuberculosis treatment of 295 patients with active pulmonary tuberculosis (TB) and normal baseline liver biochemical tests, 25 (8.5%) developed hepatitis and had a significantly higher mortality rate (32% vs. 7%, OR 6.22, 95%CI 2.0–17.6, $P = 0.001$). Multivariate analysis showed that HCV co-infected individuals were more likely to develop transaminase elevations (OR 3.43, 95%CI 1.14–10.35, $P = 0.03$) than those without HCV co-infection. They also had a longer duration of transaminase elevation (40.4 vs. 13.5 ± 8.6 days, $P = 0.01$).

Co-infection with HBV was not associated with a higher rate of hepatitis but was associated with later onset (102 ± 68.7 vs. 37.0 ± 31.9 days, $P = 0.01$), higher peak alanine aminotransferase level and slower recovery (55.5 ± 62.9 vs. 15.4 ± 10.8 days, $P = 0.01$).

Заключение: Даже при наличии нормальных показателей печеночных проб на начало лечения, сочетание с ВГС связано с высокой частотой встречаемости и длительным течением лекарственного гепатита во время проведения противотуберкулезной терапии. Мы предполагаем, что скрининг на ВГС до начала противотуберкулезной терапии является полезным для планирования частоты мониторинга лечения.

Риск развития лекарственного гепатита у пациентов с ВГС во время лечения ТБ

Таблица 2: Факторы, связанные с развитием проявления лекарственного гепатита во время противотуберкулезной терапии

Characteristic	No hepatitis (<i>n</i> = 270) <i>n</i> (%) or mean ± SD	Hepatitis (<i>n</i> = 25) <i>n</i> (%) or mean ± SD	<i>P</i> value
Age, years	64 ± 20	68 ± 17	0.35
Male	175 (65)	17 (68)	0.83
Baseline AST, IU/l	21.8 ± 6.6	22.4 ± 6.2	0.67
Baseline ALT, IU/l	15.8 ± 8.1	14.0 ± 7.5	0.30
Baseline bilirubin, mg/dl	0.55 ± 0.30	0.45 ± 0.21	0.12
HBV (+)	22 (8)	3 (12)	0.46
HCV (+)	18 (7)	7 (28)	0.006
INH+EMB+RMP+PZA	260 (96)	24 (96)	1.00
INH+EMB+RMP	10 (4)	1 (4)	1.00
Mortality	19 (7)	8 (32)	0.001

SD = standard deviation; AST = aspartate aminotransferase; ALT = alanine aminotransferase; IU = international unit; HBV(+) = hepatitis B virus co-infection; HCV(+) = hepatitis C virus co-infection; INH = isoniazid; EMB = ethambutol; RMP = rifampicin; PZA = pyrazinamide.

Is 6 months of bedaquiline enough? Results from the compassionate use of bedaquiline in Armenia and Georgia

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SUMMARY

BACKGROUND AND SETTING: Bedaquiline (BDQ) was initially only available through compassionate use programmes.

OBJECTIVE: To assess the effectiveness and safety of multidrug-resistant tuberculosis (MDR-TB) treatment containing BDQ.

METHOD: Retrospective analysis of data from patients receiving BDQ through compassionate use in Armenia and Georgia from April 2013 to April 2015. Logistic regression was used to assess the risk factors associated with unsuccessful treatment outcomes.

RESULTS: Of 82 patients included, 84.2% (69/82) had fluoroquinolone-resistant MDR-TB and 43.4% (23/53) were seropositive for the hepatitis C virus (HCV). The culture conversion rate was 84.4% (54/64), and 18.5% (10/54) reverted back to positive. In total, 79.3% (65/82) of the patients reported at least one adverse event.

Serious adverse events were reported in 14 patients, with 10/14 patients experiencing fatal outcomes—6/10 related to advanced TB and 2/10 assessed as possibly related to BDQ. Treatment outcomes were as follows: 58.5% treatment success, 12.2% deaths, 7.3% failures, and 21.9% lost to follow-up. HCV coinfection was associated with unsuccessful outcomes (adjusted OR 4.45, 95%CI 1.23–16.13).

CONCLUSION: BDQ through compassionate use showed relatively good success rates and safety profiles in a cohort with difficult-to-treat MDR-TB. High rates of reversion may indicate that >24 weeks of BDQ is necessary in some cases. HCV coinfection should be diagnosed and treatment considered in MDR-TB patients.

KEY WORDS: MDR-TB; treatment; new anti-tuberculosis drugs; duration; hepatitis C

Таблица 2: Факторы риска для развития неблагоприятного исхода в лечении у пациентов, получавших Бедаквилин на начало лечения (n = 82)

Table 2 Risk factors for unfavourable treatment outcomes among patients receiving BDQ at treatment start (*n* = 82)

Characteristics	OR (95%CI)	<i>P</i> value	aOR (95%CI)	<i>P</i> value
Male sex	1.34 (0.40–4.42)	0.632		
Age ≥ 35 years	2.16 (0.83–5.60)	0.113		
Former prison inmate	2.73 (0.97–7.68)	0.057		
Contact of an MDR-TB case	1.12 (0.37–3.38)	0.836		
BMI < 18.5 kg/m ²	2.13 (0.84–5.56)	0.112		
Cavities on CXR	8.68 (1.05–71.48)	0.044		
Bilateral disease on CXR	3.26 (1.19–8.93)	0.021		
HIV-positive	1.37 (0.18–10.28)	0.756		
Hepatitis C antibody-positive	4.27 (1.31–19.92)	0.016	4.45 (1.23–16.13)	0.023
Smear positive at treatment start	3.53 (1.33–9.36)	0.011	2.59 (0.88–7.57)	0.083
XDR-TB strain at treatment start	0.89 (0.37–2.14)	0.793		
Previous use of CFZ	0.95 (0.38–2.33)	0.902		
CFZ at BDQ initiation	1.34 (0.41–4.42)	0.632		
Imipenem at BDQ initiation	1.43 (0.50–4.08)	0.501		

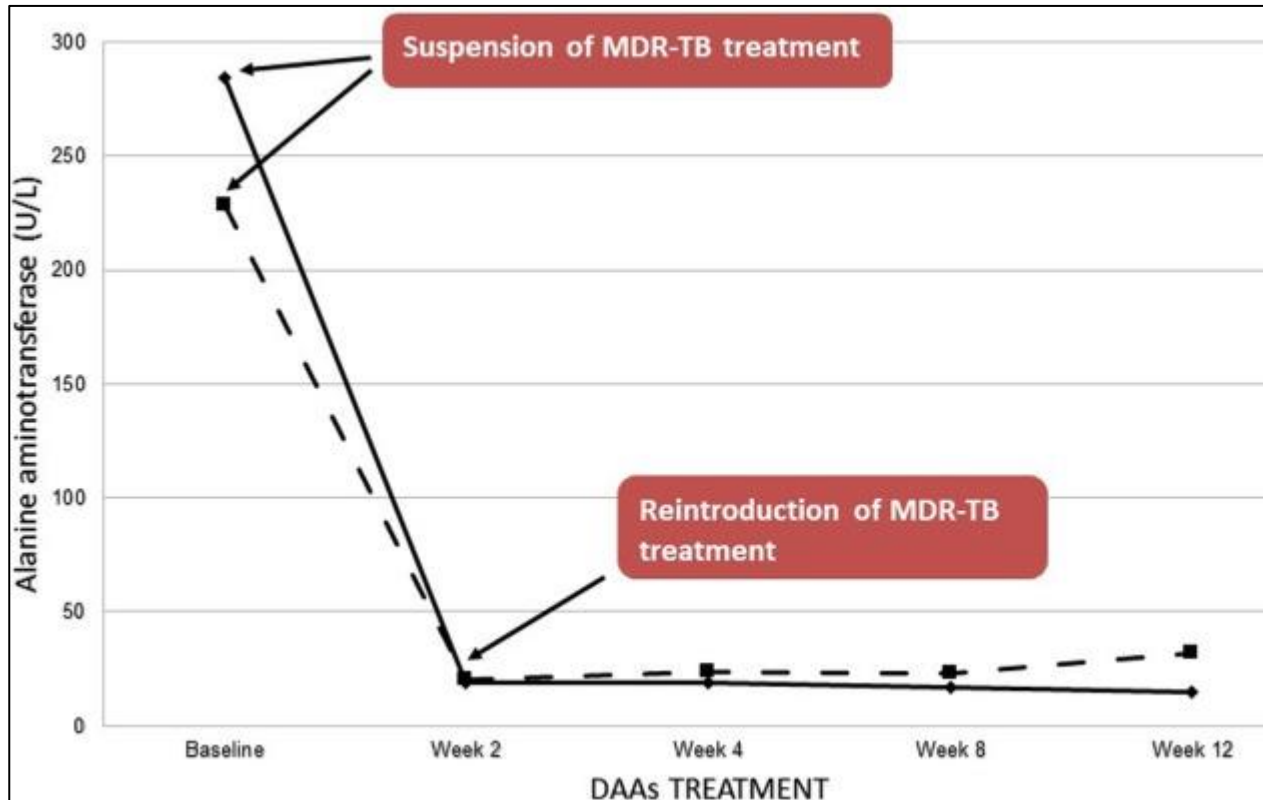
BDQ = bedaquiline; OR = odds ratio; CI = confidence interval; aOR = adjusted OR; MDR-TB = multidrug-resistant tuberculosis; BMI = body mass index; HIV = human immunodeficiency virus; CXR = chest X-ray; XDR-TB = extensively drug-resistant TB; CFZ = clofazimine.

Лекарственный гепатит может развиваться на фоне лечения ТБ

Серьезные неблагоприятные явления (СНЯ) у пациентов на более длительных режимах химиотерапии МЛУ-ТБ

Препарат	Абсолютный риск НЯ	
	Медиана %	95% доверительный интервал Бейеса
Бедаквилин	2,4	[0,7, 7,6]
Моксифлоксацин	2,9	[1,4, 5,6]
Амоксициллин-клавулановая кислота	3,0	[1,5, 5,8]
Клофазимин	3,6	[1,3, 8,6]
Этамбутол	4,0	[2,4, 6,8]
Левифлоксацин	4,1	[1,9, 8,8]
Стрептомицин	4,5	[2,3, 8,8]
Циклосерин /теризидон	7,8	[5,8, 10,9]
Капреомицин	8,4	[5,7, 12,2]
Пиразинамид	8,8	[5,6, 13,2]
Этионамид / протионамид	9,5	[6,5, 14,5]
Амикацин	10,3	[6,6, 17,0]
Канамицин	10,8	[7,2, 16,1]
<i>p</i> -аминосалициловая кислота	14,3	[10,1, 20,7]
Тиоацетазон	14,6	[4,9, 37,6]
Линезолид	17,2	[10,1, 27,0]

Лекарственное поражение печени / Drug-induced liver toxicity (DILI)



CASE REPORT

Open Access

Hepatitis C virus infection: a challenge in the complex management of two cases of multidrug-resistant tuberculosis



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Abstract

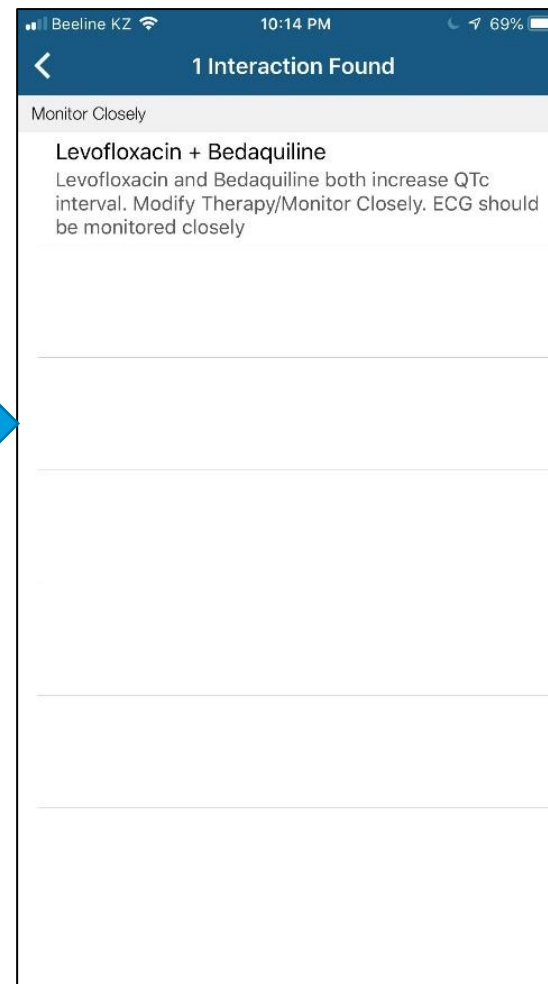
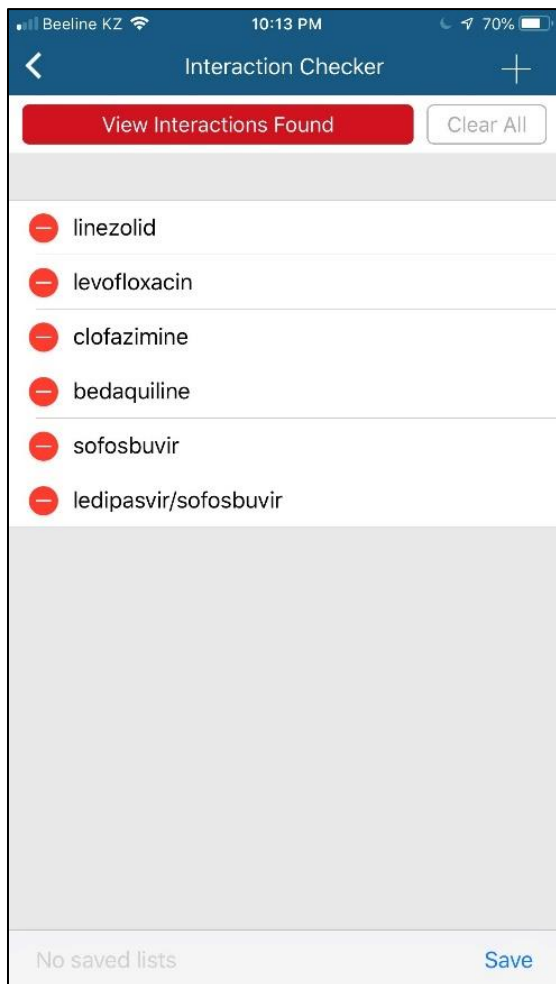
Background: Multidrug-resistant tuberculosis (MDR-TB) requires lengthy use of second-line drugs, burdened by many side effects. Hepatitis C virus (HCV) chronic infection increases risk of drug-induced liver injury (DILI) in these patients. Data on MDR-TB patients with concurrent HCV chronic infection treated at the same time with second-line antitubercular drugs and new direct-acting antivirals (DAAs) are lacking. We evaluate if treating at the same time HCV infection and pulmonary MDR-TB is feasible and effective.

Cases presentation: In this study, we described two cases of patients with pulmonary MDR-TB and concurrent HCV chronic infection cured with DAAs at a Tertiary Infectious Diseases Hospital in Italy. During antitubercular treatment, both patients experienced a DILI before treating HCV infection. After DAAs liver enzymes normalized and HCV RNA was undetectable. Then antitubercular regimen was started according to the institutional protocol, drawn up following WHO MDR-TB guidelines. It was completed without further liver side effects and patients were declared cured from both HCV infection and MDR-TB.

Conclusions: We suggest to consider treatment of chronic hepatitis C with DAAs as a useful intervention for reintroduction of second-line antitubercular agents in those patients who developed DILI, reducing the risk of treatment interruption when re-exposed to these drugs.

Keywords: Multidrug-resistant tuberculosis, Chronic hepatitis C, Treatment, Drug-induced liver injury

Medscare: проверка лекарственного взаимодействия



University of Liverpool Hep Drug Interaction Checker

<https://www.hep-druginteractions.org/checker#>

● Do Not Coadminister ■ Potential Interaction ▲ Potential Weak Interaction ◆ No Interaction Expected

Results Key

	DCV	LED/SOF	SOF/VEL	SOF/VEL/VOX
Bedaquiline	◆	■	◆	◆
Clofazimine	◆	◆	◆	◆
Delamanid	◆	◆	◆	◆
Levofloxacin	◆	◆	◆	◆
Linezolid	◆	◆	◆	◆

Совместное назначение не изучалось. Бедаквилин метаболизируется при помощи CYP3A4 и его концентрация может возрасти вследствие умеренного ингибирования CYP3A4 Ледипасвиром. Следует назначать с осторожностью в связи с узким терапевтическим индексом Бедаквиллина и риском развития СНЯ. **Если совместное назначение является необходимым, то рекомендуется более частое проведение мониторинга ЭКГ и мониторинга уровня трансаминаз.**

Возможности: операционные исследования и программные компоненты



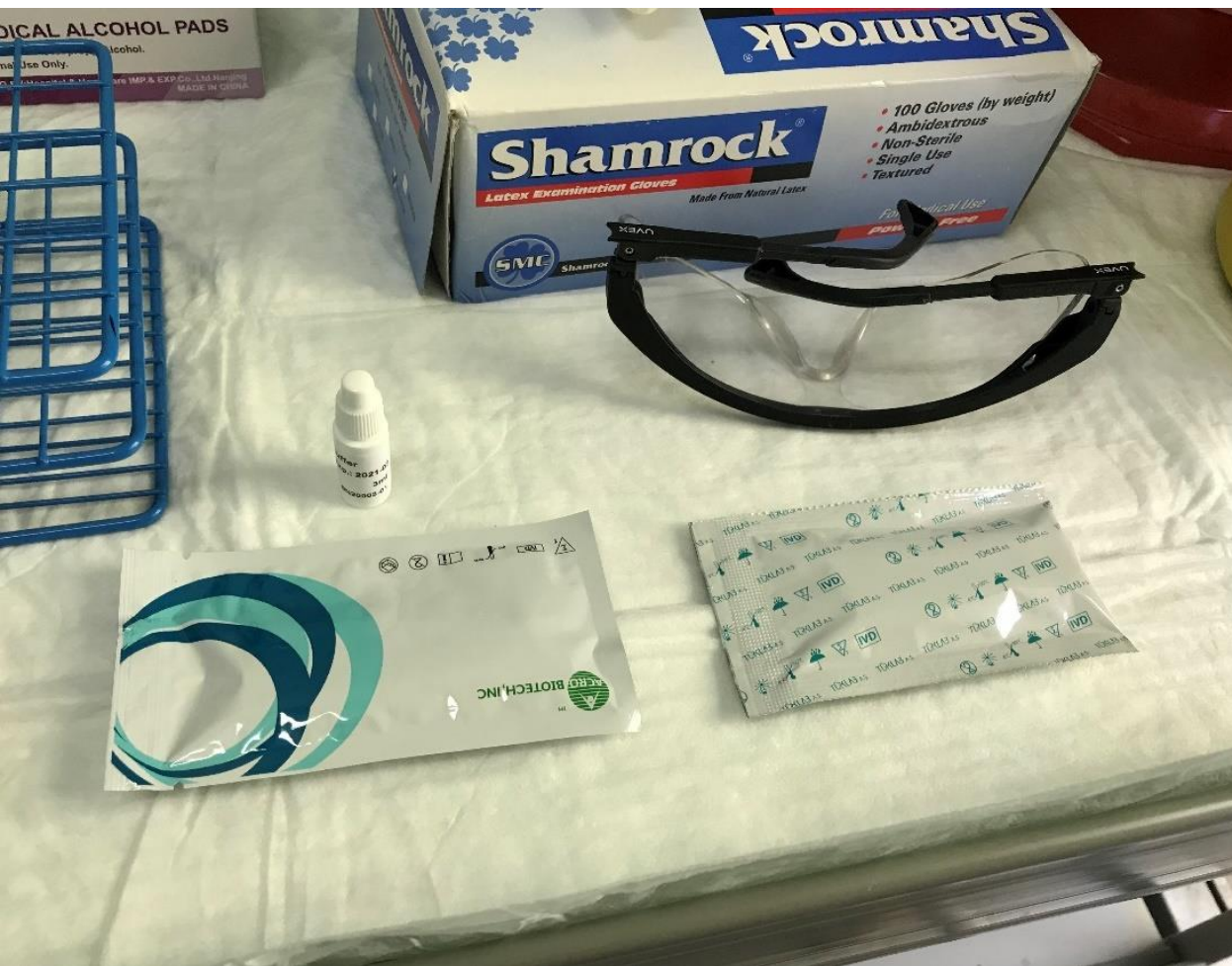
Заключение

- Гепатотоксичность встречается во время лечения ТБ и лекарственно-устойчивого туберкулеза;
- Наличие ВГС ассоциировано с повышенной гепатотоксичностью;
- Отсутствие четких рекомендаций по лечению ВГС у пациентов с ЛУ-ТБ;
- Во многих местах при наличии ПППД для лечения ВГС, оно не возможно для пациентов с ЛУ-ТБ;
- Большинство пациентов с ЛУ-ТБ в странах ВЕЦА имеют в анамнезе лечение по поводу туберкулеза;
- Факторы риска для ВГС очень часто встречаются у пациентов с ЛУ-ТБ (нахождение в МЛС, ПИН, длительный контакт с системой здравоохранения и высокий уровень распространения ВГС в регионе).

Заключение

- Скрининг на активный ВГС должно систематически проводиться на начало лечения всем пациентам с ТБ, в особенности с ЛУ-ТБ в регионах с высоким уровнем распространенности ВГС;
- Лечение ВГС может быть рассмотрено для пациентов с ЛУ-ТБ, которые не могут получать лечение в связи с гепатотоксичностью и высоким риском развития цирроза печени;
- Современное лечение ВГС препаратами DAA совместимо с лечением ЛУ-ТБ, и с большинством лекарственных препаратов для ЛУ-ТБ у них нет лекарственного взаимодействия;
- Проведение двойной терапии ЛУ-ТБ и ВГС возможно путем проведения тщательного мониторинга и под непосредственным наблюдением на уровне ПМСП;
- **Активный мониторинг безопасности во время лечения ТБ и применение пациент-ориентированных моделей лечения, которые используются в программах по борьбе с ТБ могут обеспечить надлежащее лечение больных с сочетанной патологией и повысить эффективность лечения.**
- **Операционные исследования в области ЛУ-ТБ, в частности, проводящееся в Европейском регионе ВОЗ – возможность повысить результаты лечения, улучшить качество жизни больных, усилить интеграцию с инфекционной службой и способствовать формированию будущих новых рекомендаций со стороны ВОЗ.**

Скрининг ВИЧ, ВГС и ТБ



Thank you!



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