Evaluation of a simplified model of care for chronic hepatitis C infection in Rohingya population in Ukhiya, Cox's Bazar, Bangladesh

Wasim Firuz[1], Khondaker A. Ashakin[1], Birgit Schramm[2], Olivier Camelique[1], Marve Duka[1] , Farah Hossain[3], Suna Balkan[4] , Chanchal Biswas[1]

[1]Médecins Sans Frontières (MSF), Cox's Bazar, Bangladesh; [2]Epicentre, Paris, France; [3]MSF, Tokyo, Japan; [4]MSF, Paris, France

"Our simplified model of care resulted in 99% treatment success where the regimen wise cure rate is 94%."

Introduction

- Treatment of hepatitis C virus (HCV) infection is one of the major gaps identified in the health service provision to the Rohingyas residing in camps in Ukhia, Cox's Bazar.
- In 2020, a random hepatitis C screening among MSF NCD cohort and IPD patients, using SD Bioline shows a positivity rate of 19%[1]
- Since October 2020, MSF has been providing HCV screening, diagnosis, and treatment with direct-acting antivirals (DAA), **Sofosbuvir/Daclatasvir (SOF/DAC)**.
- We aim to describe the feasibility and effectiveness of this model of care.

Methodology

- Study design: retrospective cohort
- Study cohort: Patients screened for HCV in MSF clinic
- Time period: Oct 2020 to Dec 2022
- Variables: the baseline demographic, clinical (comorbidities, symptoms of HCV infection), coinfection status (HIV, HBV) of patients screened and diagnosed with HCV
- Analysis: describe model of care
- Treatment outcome
  - -The primary outcome is sustained virological response (SVR) at 12weeks after end of treatment (HCV Viral load (VL) <1000 IU/ml).
  - -Patient characteristics, the cascade of care and treatment outcomes are described

Enrolment criteria

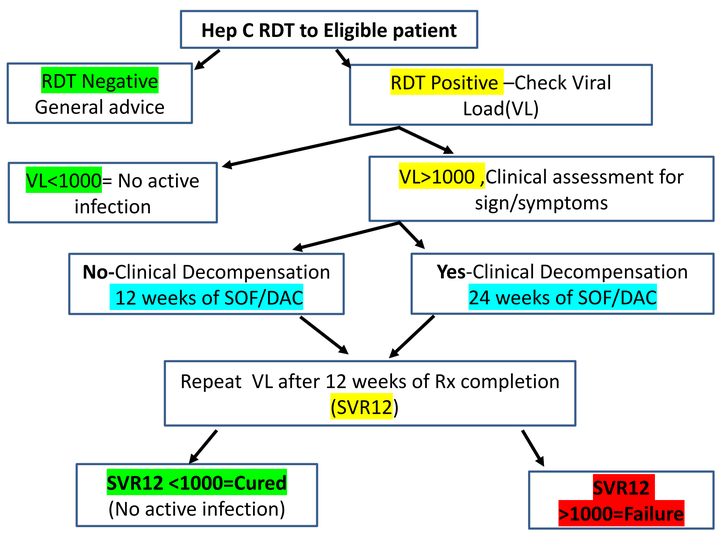
1. Patients who were already in the NCD cohort
2. Patients with s/s of decompensated cirrhosis (jaundice, GI bleeding, ascites, oedema, H/O hepatic encephalopathy, spontaneous bacterial peritonitis)
3. Partners of patient who is already in treatment (based on programme capacity)
4. Patient in the mental health cohort
5. Patient >40 years of age and presented in OPD and admitted in hospital (initial few months it was >20 years)

The criteria has been adapted several time on ad-hoc basis based on programme capacity. A monthly quota maintain to ensure quality.

Model of care

- The simplified model consists of clinical based decision for decompensated cirrhosis, limited laboratory tests, and restricted follow up visits (Figure -1)
- No APRI,FIB-4 followed
- Asymptomatic cases assigned for 12 weeks of SOF/DAC & patient with clinical signs of decompensation assigned for 24 weeks of SOF/DAC
- **Initial screening visit:** includes HCV RDT test, if positive that VL sample, HIV, Pregnancy (for females of childbearing age), HbsAg, and random blood sugar tests.
- **Treatment initiation:** in second visit, patients commence treatment if VL exceeds 1000 IU/L or receive counseling if VL is below this threshold.
- **Follow-up visits:** monthly consultations with drug refill: for the 12-weeks regimen visits at week-4 and week-8, then end of treatment at week-12, (the 24-week regimen has 5 drug refill), followed by SVR12 assessment and result. communication

HEP C CARE PATHWAY (FIGURE 1)



Results

- Among 10,610 patients screened with rapid HCV antibody test (SD Bioline), 51.3% (5445) were sero-positive. Among them 94.9% (5170/5445) had an HCV Gene-Xpert® VL test done, 70.7% of whom (3658/5170) had a VL >1000 IU/ml and were eligible for treatment. Of those eligible, 88% (3208/3658) initiated treatment with SOF/DAC: 2961 (92%) under the 12 weeks regimen and 247 (8%) under the 24 weeks regimen.
- Among the initiated patients 99.2% (3185/3208) completed treatment, of whom 87.6% (2790/3185) had a SVR12 assessment done, with 94.58% cured in 12 weeks regimen (2639/2790) and 94% cured in 24 weeks regimen (142/151).(overall cure rate was 94.2%)
- To be noted that 12%(385) of patient who initiated the HCV treatment completed the treatment however did not complete follow up and did not do the final PCR test .

Figure 2: Flow of MSF's HCV cohort in Ukhiya , Bangladesh , Oct 2020-Dec 2022

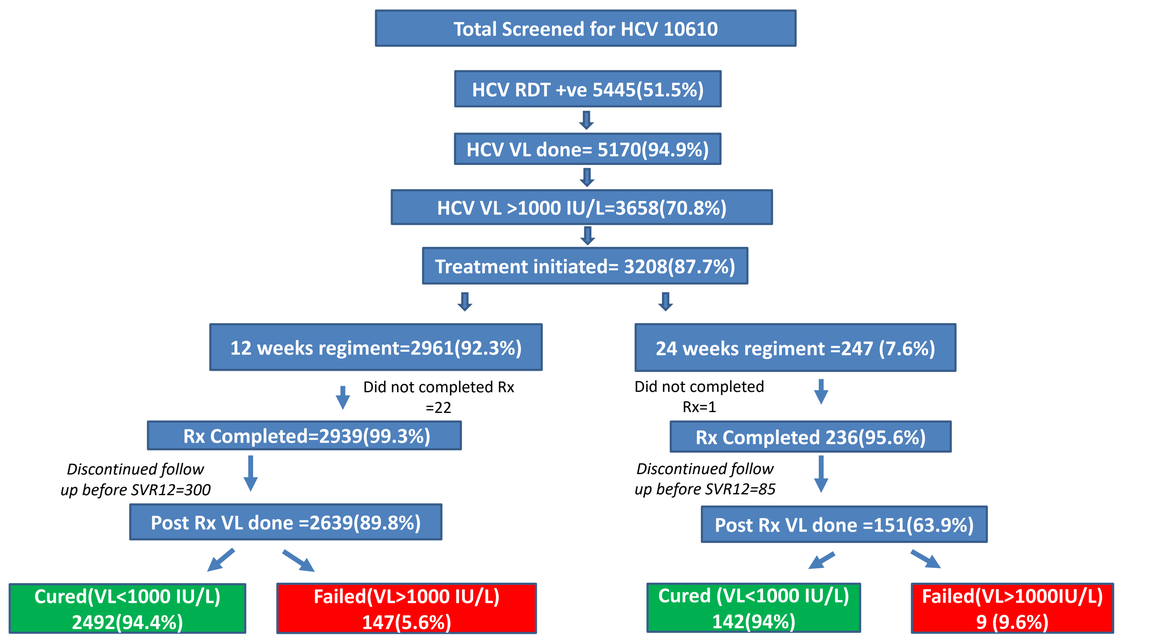


Table 1: increase of HCV seropositivity over the time

HCV BD Data	2020	2021	2022
Nb of screened	2316	3866	4428
HCV Seropositivity	549(23.7%)	1653(42.75%)	3243(73.24%)

Discussion

- MSF choose a simplified public health approach using only a few laboratory test and/or clinical based decision for decompensated cirrhosis. This simplified model allows treatment of HCV cases without support of any specialist and can be easily scaled up depending on programme capacity.
- Until early 2024, MSF was the primary provider of HCV treatment in the camps. Although other facilities have HCV tests, they do not provide treatment. Initially (2020-2021) MSF treated only HCV patients identified in its NCD cohort, but then included patients screened for HCV by other agencies (2021-2022) those unintentionally received priority, resulting in a high seropositivity rate (>50%) among the screened patients(Table -1)
- In low-resource settings, advanced tests such as FIB-4,APRI, and genotype, are often not available. This simplified public health approach demonstrated high cure rates (94%) which proves the relevance of the model .However many patients (395, 11%) miss post-treatment check-ups. To overcome this a comprehensive counselling session after treatment completion can be recommended

A recent study done by MSF showed a high disease burden in Rohingya camp (29.7%, seroprevalence & 19.6% active infection[2])

Conclusion

- Our findings demonstrate that a public health approach based simplified model of care is feasible and effective in a limited-resources refugee context
- This experience should inspire others in the camps and advocate for integrating HCV treatment into the essential care for the Rohingya in Cox's Bazar
- It will encourage MSF and others medical agencies to replicate the model in similar contexts around the world where HCV is still a public health problem.

Reference :

1. Total 105 positive in 546 HCV RDT screening in IPD and NCD cohort , August 2020, Hospital on the Hill.
2. Prevalence of active HCV infection and associated risk factors among members of Forcibly Displaced Myanmar National (FDMN) Population residing in camps, Cox's Bazar, Bangladesh,2023