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ABSTRACT BOOK
1

Increasing HCV disease awareness, diagnostic and linkage to care into harm reduction program in Georgia

Maka Gogia¹, Ketli Stvilia²

¹Georgian Harm Prevention Network, Tbilisi, Georgia.
²National Center for Disease control and Public Health, Tbilisi, Georgia

Background

HIV and HCV remain significant public health challenges in Georgia. The most affected risk groups for both infections are PWIDs. Prevalence of HCV in PWIDs that varies between 50-92% illustrates high magnitude of the problem. HCV screening was accessible in harm reduction program since 2006, but due to high cost the treatment was not affordable, especially for key populations. Accordingly no diagnostic and linkage to care services existed in harm reduction program. Georgian harm reduction network-GHRN was actively involved into a long advocacy process demanding free treatment for HCV patient PWIDs. Under strong civil society pressure Government had to act and National HCV elimination program took a start from 2015 with aims to eliminate HCV by 2020 in country. Additional barrier was strict drug law environment that hampered attraction of PWIDs in testing, their retention in service delivery and linkage to care services.

Materials and methods

In order to react proactively towards its new role for the hepatitis C elimination, GHRN has developed new targeted interventions which were aligned with HIV prevention interventions supported by the GFATM HIV program. The emphasis was placed on increased HIV/HCV tandem screening of PWID population through expanding outreach capacities of the program. For avoiding stigma and self-stigma factors HCV testing was offered to general population as well. Mobile ambulatories expanded the program coverage to 32 cities allowing testing of additional 11,101 PWIDs in 2016. Case managers that were mostly people living with viral hepatitis were ensuring linkage of screening positive PWIDs to HCV treatment sites. GHRN with support of other international organizations started piloting of patients’ schools and peer driven interventions (PDI). HIV and HCV Tandem testing was supported by the GFATM HIV program. Collaboration with Police was initiated to gain their support for outreach work. HCV education module was included in existing PDI educational programs, informational-education flyers and brochures about HCV were delivered to PDI program participants as well.

Results

New model practices of the harm reduction programs including tandem testing on HIV and HCV allowed increasing the number of PWIDs tested for HCV twice in 2016 (26,025) in comparison to 2014 (12,410). 42.6% of testing was conducted through outreach testing by mobile ambulatories. 10,926 PWIDs were referred to HCV treatment sites, HCV education module was included to existing Peer Driven Intervention educational program, informational-education flyers and brochures about HCV were delivered. At harm reduction sites more emphasize was done on increasing HCV disease awareness, delivering free RNA diagnostic and treatment adherence support.

Conclusions

Capacities of the harm reduction programs can effectively be used for early detection, linkage to treatment services for HCV positive PWIDs. Proper risk counseling and disease awareness activities are inevitably important to decrease the risk of re-infection among PWIDs. Strong Integration between HCV and HIV programs ensures cost-effectiveness of both interventions. Unified screening and treatment databases are critical for success of the elimination program. Besides, initiation of HCV national program enabled initiation dialogue with Police officials to smooth attitude to harm reduction program.
Strategies and innovations of the prevention campaign of the hepatitis prevention, control, and elimination program in Mongolia: analytical and data-driven approach for creative utilization of social media

Erdenebileg Enkhbayar, Battuvshin Surenpurev, Surenkhuu Narankhuu, Asenguli Imashkhan, Uranchimeg Dagva, Naranjargal Dashdorji.

1Onom Foundation, Ulaanbaatar, Mongolia, 2Liver Center, Ulaanbaatar, Mongolia, 3Medical Information Technology Association of Mongolia, Ulaanbaatar, Mongolia, 4Mongolian Laboratory Network, Ulaanbaatar, Mongolia, 5Mongolian Society of Hepatology, Ulaanbaatar, Mongolia, 6Mongolian Academy of Sciences, Ulaanbaatar, Mongolia

Hepatitis B and C together killed 1.45 million people in 2013, which is more than the number of mortalities due to malaria, tuberculosis, or HIV/AIDS. Mongolia has the world’s highest rate of liver cancer mortality—nearly eight times the global average. Prevalences of chronic viral hepatitis B, C, and D in Mongolia are at an endemic level and constitute the main cause for Mongolia’s world-leading liver cancer mortality rate, which has been steadily increasing over the last decade. At the moment, liver cirrhosis and hepatocellular carcinoma mortalities account for 15% of all annual mortalities in Mongolia, and it is projected to increase in the future. Despite the endemic prevalence of viral hepatitis and its deadly consequences, there were no public health campaign on viral hepatitis. This glaring gap of public health messaging led to utter lack of awareness, low testing rates and late diagnosis of liver cirrhosis and liver cancer in Mongolia. Therefore, the Prevention Campaign of the Hepatitis Prevention, Control, and Elimination (HPCE) Program is designed to mitigate this particular issue, and there are three main components within the Prevention Campaign:

- Nationwide Public Health Campaign
- High-Risk Groups HBV Vaccination Campaign
- Identifying and Eliminating High Risk Factors

Nationwide public health campaign is currently being carried out under the slogan of Элгээ Хайрлая, which literally can be translated into English as Love Your Liver. The main objective of the Элгээ Хайрлая public health campaign is to increase awareness and knowledge of Mongolian public about viral hepatitis and its deadly consequences and ways of preventing viral hepatitis infection and protecting loved-ones from this life-threatening disease. Analytical and data-driven approaches are employed for designing and conducting the nationwide public health campaign. In fact, data from public knowledge and awareness assessment surveys are regularly analyzed to optimize the design and execution of the public health campaign. Within the ЭЛГЭЭ ХАЙРЛАЯ public health campaign, the Onom Foundation launched www.eleg.mn (eleg means liver in Mongolian), the main online portal disseminating information related to the HPCE Program in Mongolia. Within the ЭЛГЭЭ ХАЙРЛАЯ public health campaign, we also created the ЭЛГЭЭ ХАЙРЛАЯ Community Page on Facebook at the following address: https://www.facebook.com/ eleg.mn. Since its launch in November of 2013, the ЭЛГЭЭ ХАЙРЛАЯ page became an active social media environment where people seek for information about chronic viral hepatitis and its treatment and care. Another very important vehicle for social media campaign is Twitter on which are two handles of @ElegMN and @HepatitisMongol for the HPCE Program in Mongolia. Currently, through our social media channel we reach over 300,000 people every month. In addition, we are working to reach every family in Mongolia with a booklet covering all you need to know about viral hepatitis. So far, we have distributed over 80,000 booklets to people who got tested for viral hepatitis. In order to track their knowledge increase, we are working publish updated version of the booklet with a knowledge quiz. By answering the knowledge quiz online, people can enter into lottery with special prizes.
The benefits of screening for hepatitis C in primary care "The Silent Killer"

Merry Perry, Nurse Practitioner Carolyn Eiland

Background
Chronic hepatitis C virus (HCV) affects more than 3 million people in the United States. The innovative HCV treatment offers a shorter treatment interval with lesser adverse reactions as well as impressively improved cure rates of 96%. The increasing rates of hepatitis C infections in adults have been accompanied by multifaceted adverse health outcomes. The purpose of this screening program is to identify HCV and human immune deficiency virus (HIV) infected individuals through which will lead to clinical interventions and treatment that will improve health outcomes compared to no screening.

Materials and methods
The Centers for Disease Control and Prevention guidelines recommend that all persons born between 1945 and 1965 be screened for HCV infection and anyone with risk factors. HCV screening at Curtis V. Cooper Primary HealthCare Inc. (CVCPhC), are individuals between the ages of 18 and up. HIV screenings includes individuals age 13 and up. Our program identified that 67% of HCV antibody positive patients are chronically infected. The screening program provided evidence of the true impact of HCV positive individuals within the community as well as in individuals that are unaware of their positive status. Gilead launched the Frontlines of Communities in the United States (FOCUS) program in 2010 to address systemic and institutional barriers to routine HIV and HCV screening and access to care.

FOCUS partnerships help us to do the following:
2. Reduce the number of undiagnosed individuals, decrease the number of those who are diagnosed late, and ensure linkage to care and treatment.
3. Generate dialogue among healthcare systems on increasing HIV and HCV diagnosis.
4. Change public perceptions, and overcome HIV- and HCV-related stigma that may discourage testing.

Build innovative partnerships for the creation of sustainable testing models. FOCUS now has a network of transformational partnerships in hospitals, clinics and community programs across 18 of the most vulnerable U.S. cities. Our FOCUS Program has extended into the correction system.

Results
The CVCPhC’s HCV screening program was implemented in January 2016 and as of December 2016, a total of 7149 patients have been screened for HIV, with 29 individuals identified as HIV positive, yielding 83% linkage to care and 5525 screened for HCV with 247 HCV antibody positive HCV RNA tested with 165 resulting in a RNA positive test, yielding 83% linkage to care. The current case reports consist of 102 HCV patients treated with medication or HCV and a 100% cure rate.

Conclusion
Screening for HCV leads to the appropriate intervention and treatment for persons infected with HCV, preventing the progression of liver disease and reducing morbidity and possibly mortality.
Evaluation of the efficacy of the Egyptian program for hepatitis B virus vaccination: a cross sectional national survey

Mohamed Mokhles¹, Hanaa Rasmy¹, Fatma Shaaban¹, Nahed Emara¹, Hanaa Imam¹, Mona Hamed¹, Ghada Abd El Latif², Nihad Ibrahim¹, Haitham Gabr¹, Amr Omaia¹, Amira Gadallah¹, Ammal Metwaly¹

¹National Research Center, Cairo, Egypt

Background
Egypt started a compulsory vaccination program against hepatitis B virus (HBV) infection among infants in 1992. This study aimed at evaluating the short and long term efficacy of this program.

Materials and methods
This cross sectional national survey targeted children aged >1–16 years vaccinated during infancy under the Egyptian HBV vaccination program. The survey was implemented in 6 governorates representing the 6 major subdivision of Egypt. The study sample included 396 children aged >1-2 years, 630 children aged >2-6 years, 643 children aged >6-12 years, 637 children aged >12–15 years and 746 children aged >15-16 years, accessible at maternal and child health centers (MCH), primary, preparatory and secondary schools respectively. All studied children were subjected to blood test for; Hepatitis B surface antibody (HBsAb) titre, Hepatitis B surface antigen (HBsAg) and Hepatitis B core antibody (HbcAb), children showing a serological pattern of HbcAb+ve / HBsAg-ve were additionally subjected to HBV-DNA testing.

Results
Five subjects (0.16%) were infected; 4 HBsAg +ve, 1 (HbcAb+ve /HBsAg-ve/ HBV-DNA+ve), 148 subjects (4.84%) were HbcAb +ve. HBsAb ≥ 10 IU/L was found in 95%, 87.3%, 58.5%, 41% and 29.7% at >1-2, >2-6, >6-12, >12-15 and >15-16 years age groups respectively, with a significant risk for losing the HBsAb protective titre between all the age groups and the >1-2 years group. The risk for losing the immunoprotective HBsAb level 8-16 years post vaccination was 11 folds higher than >1-<8 years post vaccination, while rural areas residents have a 1.28 folds risk for losing the protective higher than urban areas residents.

Conclusion
The Egyptian program for HBV vaccination proved to be efficient in terms of prevention of infection. HBsAb titre wanes significantly with time yet seems to preserve a good immunological memory, making a booster dose unnecessary 16 years post vaccination.

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Value of hepatitis C preventive efforts among the people who inject drug (PWID) within different geo-points of Bangladesh

Zubair Shams¹, Lima Rahman¹, Mohammad Omar Faruque¹
¹Save The Children, Bangladesh

Background
Hepatitis C (HepC) is a global health concern as approximately 399,000 people die each year from HepC and it causes increased DALYs by 43% compared to 1990. HepC prevalence was about 0.2% among general population and about 25% among people who inject drug (PWID) in Dhaka, Bangladesh in 2005-06. It was evident that HIV prevalence remained less than 0.01% among general population but less than 1% in key population including PWID. Thus, PWID is at higher risk of HepC compared to HIV infection. Save the Children with the financial support of the Global Fund has been implementing harm reduction services under HIV/AIDS program in Bangladesh. Current program covers 11,500 PWID (35% of national estimation) in 19 districts. Besides distribution of sterile needles-syringes (N-S) and condoms, program has referral mechanism & IEC/BCC activity to prevent HepC. However, HepC, is not yet administered adequately. Furthermore, inter-regional comparability is also required because vulnerability and needs vary within country location.

Materials and methods
An epidemiological analysis from the national serological surveillance, relevant literatures and routinely collected data from SCI-HIV/AIDS program were reviewed. Geographical difference was also observed.

Results
National survey (2011) showed that HepC prevalence had highest range (69.6%-95.7%) among PWID in some of the selected sites of Rajshahi region-north-west of Bangladesh whereas Dhaka region had 9.4% to 39.6%. Though Dhaka has high HIV prevalence among PWID compared to any other parts of Bangladesh, but there was an increasing trend of HepC from 1999 to 2011 in different sites of Rajshahi region. On the contrary, other regions had relatively decreasing trend over the years. Presently, more than half (66%) of estimated PWID in Rajshahi region is under program coverage. Recent (2016) program data demonstrated that N-S exchange rate is higher (on average 94%) in Rajshahi region compared to Dhaka region (on average 82%). Also, program did education session on HepC since inception (2015). Furthermore, current program in Rajshahi met the Global Health Sector Strategy (GHSS) target of 200 N-S distribution /PWID / year on viral hepatitis.

Conclusions
The HepC incidence and injection drug use are two public health issues interconnected at the levels of transmission, management and mortality. But lack of recent information on HepC prevalence particularly in Rajshahi region reflects a gap for the national stewardship in prevention & treatment. Nevertheless, HepC screening is vital. Lastly, regional epidemiology and other contextual factors should be prioritized for designing a high impact & cost effective intervention.

Significant occurrence of occult hepatitis B infection among family contacts of HBsAg positive individuals

Shreyasi Athalye¹, Tejashwini Parmar¹, Kruti Dalal¹, Priya Yabaji¹, Bhavik Dalal¹, Akash Shukla², Aruna Shankarkumar¹
¹National Institute Of Immunohaematology(ICMR), Mumbai, India, ²Department of Gastroenterology, KEM Hospital, Mumbai, India

Background
Hepatitis B virus is a major global health problem with around 40 million carriers in India. Occult Hepatitis B infection(OBI) is defined by the absence of HBsAg but presence of anti-HBc and/or low levels of HBV DNA (<200 IU/mL) in the serum of individuals. The low levels of HBV DNA is most likely due to the suppressive action of antiviral cytotoxic T cells on the viral replication and expression. Intrahepatic persistence of the wild type virus eventually leads to OBI, which may activate in the event of immunosuppression, leading to severe hepatic damage.

OBI is often considered in limited clinical situations such as liver transplantation or treatments involving use of immunosuppressants.
Unimmunized family contacts of classical HBV cases are at the risk of contracting the infection due to close household contact. Hence, it is important to diagnose and monitor OBI among family contacts of HBV positive individuals for potential liver complications in future. This study aims to understand the occurrence of OBI among close family contacts of HBV positive individuals.

Materials and methods
The study was conducted at National Institute of Immunohaematology (ICMR), Mumbai. 171 family contacts of 70 HBsAg positive index cases consented to this study. HBsAg (SD HBsAg ELISA) and anti-HBc screening (Anti-Corase B 96, GBC) was performed by commercial ELISA. The samples positive for anti-Hbc were tested again and only the samples that gave repeated positive result were considered positive.

Results
Of the 171 family contacts of 70 HBsAg positive index cases, 22 (12.86%) were positive for HBsAg whereas 76 (44.44%) were negative for HBsAg but positive for anti-HBc. Seventy three individuals (42.69%) were negative for both markers for HBV.

Conclusion
A significant number of family contacts (44.44%) had OBI among the family contacts studied. The numbers are significantly higher, considering the intermediate prevalence (3-4.2%) of HBsAg in the country. This emphasizes the need for an action plan to increase awareness about the transmission of HBV and programs for protective immunization against it.

7

Potential risk of HBV transmission in government blood banks from Maharashtra

Amruta Patil¹, Shreyasi Athalye¹, Shailesh Shinde¹, Aruna Shankarkumar¹

¹National Institute Of Immunohaematology (ICMR), Mumbai, India

Background
Occult HBV infection is defined as the presence of HBV DNA in blood or liver tissues in individuals negative for HBsAg but who may or may not be positive for HBV antibodies. Voluntary donors with occult HBV infection are a potential source of HBV infection who lack HBsAg but may have antibodies against HBV core antigen and HBV DNA.

Objective
To investigate serological and DNA markers of HBV in voluntary blood donor samples from Maharashtra.

Material and methods
Each government blood bank in Maharashtra was requested to collect 200 samples of voluntary donors. Two ml of serum was collected on prior permission from governing authority. The samples were tested for HBsAg and Anti-HBc. Follow-up of OBI units was done in donor-recipient pairs.

Results
Occult Hepatitis has been characterized by the absence of HBsAg in the blood. On the basis of markers tested for Hepatitis B virus, the percentage of samples negative for HBsAg marker, but positive for Anti-HBc was found to be ranging from 6% to 46.7% in 13 districts of Maharashtra.

Donor-recipient follow-up: A total of 22 samples were collected from Raigad district which included 10 donors and 12 recipients. Of these, four pairs of corresponding donors - recipients were identified. Two pairs were selected for HBV DNA quantification using real time PCR. One donor had viral load of 6004.5 IU/mL and the corresponding recipient also showed a viral load of 3312.6 IU/mL. The presence of viral load in the recipient's serum strongly suggests the transmission of occult hepatitis B via blood transfusion.

In addition, there are conflicting observations with respect to prevalence of markers for HBV in some regions. A region with 0% positivity for HBsAg showed very high positivity for anti-HBc(46.70%). This controversy between HBV infection markers indicates that there is high chance of occult HBV infection circulating in this region. There is a high probability that some small pockets may have developed due to high risk behavior population or unhygienic practices which need to be confirmed by behavioral study.

Conclusion
The study indicates that although the apparent prevalence of the HBsAg marker is low in these districts, the possibility of previous exposure as well as presence of occult HBV infection in the population is highly probable. Further in depth serological and genetic studies by sequencing would need to be done for confirmation of differential pattern of occult HBV transmission in different parts of Maharashtra.
Sociodemographic and clinical characteristics associated with chronic hepatitis C infection, Los Angeles, 2015-2017

Mabel Kimble¹, Di He², Ms. Yeonsoo Baik², Samantha Ramirez³, Chrysovalantis Stafylis⁴, Marjan Javanbakht⁵, Sammy Saab³, Jeffrey Klausner¹

¹Division of Infectious Diseases, Department of Medicine, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, United States, ²Department of Epidemiology, Fielding School of Public Health, University of California Los Angeles, Los Angeles, United States, ³Department of Medicine and Surgery, University of California Los Angeles, Los Angeles, United States

Background

In the United States, chronic hepatitis C infection occurs in 75% -85% of hepatitis C virus (HCV) infected persons. Chronic HCV infection may lead to liver complications, including fibrosis, cirrhosis and hepatocellular cancer. There are limited data on factors associated with chronic HCV infection in different populations. We examined the prevalence and correlates of chronic HCV infection among patients screened in a large urban healthcare system.

Materials and methods

Patients were identified between November 2015- May 2017 as part of a new hepatitis C screening and linkage-to-care program implemented at University of California Los Angeles (UCLA) Health. Those eligible for hepatitis C screening were born between 1945-1965 and had no prior history of HCV testing. All patients anti-HCV antibody positive (ADVIA Centaur® HCV (aHCV) Assay by Siemens for Ortho-Clinical Diagnostics, Inc. and Grifols Diagnostic Solutions Inc., Germany) were tested with a quantitative RNA test (COBAS® Ampliprep/ COBAS® TaqMan® HCV test, Qualitative and Quantitative, v2.0; Pleasanton, California). Chronic HCV infection was defined as HCV RNA detected. To verify that HCV RNA negative patients spontaneously cleared hepatitis C virus, any HCV treatment history was assessed through medical record review and patient interviews. We used descriptive statistics to compare those with detectable HCV RNA versus those with undetectable HCV RNA. Chi-square test was used for statistical comparison between subgroups by gender, race/ethnicity, the status of chronic kidney disease and liver enzyme levels.

Results

Among patients screened for the anti-HCV antibody, 310 patients were newly identified HCV Ab reactive. Thirty-four percent (104/310) of those newly identified had chronic HCV infection. The prevalence of chronic HCV infection was higher among men 38% (64/168) as compared to women 28% (40/142) (p <.06). Chronic HCV infection also varied by race/ethnicity with the highest prevalence among Blacks 59% (22/37), followed by Latinos 37% (10/27) and Whites 33% (57/174) (p <.01). Among blacks, the prevalence of chronic HCV infection was 59%, (22/37). The prevalence of chronic HCV infection also varied by a diagnosis of chronic kidney disease 48% vs. 33% for no chronic kidney disease (p =.14) and increased levels of liver enzymes (p < .001). Specifically, median values of alanine transaminase (ALT) and aspartate transaminase (AST) among those with chronic HCV infection were 38 U/L (Interval quartile [IQR] = 24-81) and 34 U/L (IQR = 27-56), respectively compared to 19 U/L (IQR = 15-27) and 21 U/L (IQR = 17-26) among RNA negative patients (p-value <.01).

Conclusions

The frequency chronic HCV infection among newly identified anti-HCV positive patients at UCLA Health was lower than national estimates. In addition, chronic HCV infection was associated with male sex, black race, and liver inflammation. Overall, demographic and clinical characteristics associated with chronic HCV infection was consistent with previous studies.
Exosomal miRNAs derived from umbilical mesenchymal stem cells inhibit hepatitis C virus infection

Zhongtian Qi¹, Xijing Qian¹, Ping Zhao¹

¹Department Of Microbiology, Second Military Medical University, Shanghai, China

Background
Hepatitis C virus (HCV) infects approximately 3% of the world population. Though the development of direct acting antivirals (DAAs) have improved the sustainable virological response (SVR) rate in HCV patients, novel anti-HCV agents with higher efficacy and better tolerance are still urgently needed. Cell-based therapy, like exosomes, has become one of the most popular therapeutic methods in recent years.

Materials and methods
Conditioned medium from umbilical mesenchymal stem cells (uMSC) is used to test its effect on HCV infection. Exosomes are further extracted and purified from the supernatants of uMSC (uMSC-Exo), and its anti-HCV activity is evaluated. Single cycle HCV pseudoparticles are applied to determine the effect of uMSC-Exo on HCV entry. Host cells are transfected with viral RNA or HCV replicon cells are utilized to detect the effect of uMSC-Exo on viral replication. The intracellular and extracellular infectivity are also evaluated to test the effect of uMSC-Exo on viral assembly and release. Proteinase K treatment assay is used to determine which components in uMSC-Exo are the functional substances. Small RNA sequencing is made with uMSC-Exo, and miRNAs with antiviral potency are identified. Function analysis is carried out by overexpression or knock down of relevant miRNAs, and their roles in inhibiting HCV infection are evaluated.

Results
uMSC inhibit HCV infection by paracrine, and uMSC-Exo are the main active constituents in this process. uMSC-Exo can enter Huh7 cells and reduce intracellular HCV RNA level as well as viral protein expression in infected cells. uMSC-Exo have no effect on viral entry, but suppress viral replication. Proteinase K treatment assay confirms that the RNA components are the active anti-HCV constituents in uMSC-Exo. Small RNA sequencing of uMSC-Exo indicates their miRNA expression profile. Among them, nine miRNAs are upregulated in the host cells after uMSC-Exo treatment. The functional analysis suggests four miRNAs (let-7f, miR-145, miR-199a and miR-221) play important roles in HCV infection. The inhibitory effect of uMSC-Exo is lost when the uMSC are transfected with the inhibitors of the four miRNAs. uMSC-Exo exhibit synergistic effect when combined with IFN or VX-950.

Conclusion
uMSC-Exo inhibits HCV infection by exosomal miRNAs (let-7f, miR-145, miR-199a and miR-221) with antiviral activity on viral replication. This work provides novel insights and possibility for developing anti-HCV therapy.
Evaluating the hepatitis C screening and linkage to Care Cascade in the emergency department setting

Karen Mulligan¹, Jeffrey Sullivan¹, Lara Yoon¹, Jacki Chou¹, Karen Van Nuys²
¹Precision Health Economics, Los Angeles, United States, ²Schaeffer Center for Health Policy and Economics at the University of Southern California, Los Angeles, United States

Background
Half of individuals infected with hepatitis C virus (HCV) are unaware of their infection status. Current CDC HCV screening guidelines recommend a one-time HCV screening for individuals born between 1945-1965 and individuals with increased risk of infection. Although the guidelines are not targeted at emergency departments (ED), HCV seroprevalence among ED patients is high, making this an important potential setting for screening high-risk populations who may not be seen in other care settings. Given their past success with HIV screening, EDs are well-positioned to implement HCV screening and linkage to care (SLTC) programs. These programs would not only include initial antibody (Ab) screening for HCV, but also confirmatory RNA testing and linkage to care for HCV patients. The objective of this study is to determine how an HCV-susceptible population moves through the HCV SLTC cascade in the ED, and identify opportunities to reduce the number of patients who are lost to follow-up.

Materials and methods
A Markov model simulated a cohort of HCV-susceptible patients through the HCV SLTC cascade. Three scenarios were explored: Baseline, where each test in the SLTC cascade (Ab testing, RNA testing, fibrosis staging, and genotype testing) required a separate visit and all infected saw a specialist; Reflex, which grouped Ab and RNA testing; and Consolidated, which grouped Ab testing, RNA testing, fibrosis staging, and genotype testing into one visit, with an optional specialist visit. Later steps (prescribing treatment, drug testing, prior authorization, and obtaining prescription) were identical in all scenarios. Model parameters were sourced from the published literature.

Results
In Baseline, 72% of Ab-positive patients are lost to follow-up, which decreases to 24% in Reflex, and 5% in Consolidated. In Baseline and Reflex, most patients are lost between a positive RNA test and genotype/fibrosis testing. Consolidated reduces the number of patients lost prior to RNA testing and learning their infection status by 94% compared to Baseline.

In Baseline, 4% of Ab-positive patients initiate treatment, compared to 21% for Reflex and 30% for Consolidated. The results for an ED setting are comparable to findings for an FQHC setting, which had 5-10% of patients initiate treatment. Patients also initiate treatment more quickly in scenarios with fewer visits: of patients who will eventually receive treatment, 41% have received treatment in Baseline within one year, compared to 60% (61%) in Reflex (Consolidated).

Conclusions
A successful HCV SLTC in the ED setting will require additional resources to facilitate linkage to care following HCV screening, but a simplified SLTC process, as modeled by our Consolidated scenario, will reduce the burden on linkage teams. Collapsing the number of visits required in the SLTC cascade reduces the number of patients lost to follow-up during the SLTC by 92% and results in a higher proportion of patients initiating treatment within a year. Combining Ab, RNA, and genotype testing with fibrosis staging into a single reflex step, which can be performed during the ED visit without increasing provider burden or patient length of stay, enables more ED patients to learn their infection status and receive appropriate care.
Community of PWID can efficiently complete the Cascade of Care and treatment for HCV using direct acting antivirals

Nalinikanta Rajkumar¹, Pramod Ningombam²

¹Community Network For Empowerment (CoNE), Imphal East, India, ²Community Network for Empowerment (CoNE), Imphal East, India

Background

Manipur as resource poor states of India bordering Myanmar, have extreme difficulties in accessing HCV testing, diagnosis and treatment in spite of prevalence of 98% among PWID. Understanding among PWID on HCV is low as no program addresses HCV. There is increased HCV related mortality among PWID living with HIV and thus the need for finding the people and link to diagnosis and treatment as early.

Materials and methods

CoNE advocated with the Department of Health to conduct HCV screening among PWID and general clinic attendees. Camps were conducted at 9 district hospitals. Government contributed infrastructure, manpower and blood storage facilities while the network mobilized PWID as well as clinic attendees. HCV RNA PCR test were conducted on the antibody reactive samples. Liver assessment was conducted using Fibro scan. Similar testing camps are being replicated among PWID with NGOs implementing HIV Targeted Intervention project and drug treatment centers due to increase in demand. People, who were willing to be on treatment, were linked to treatment using direct acting antivirals.

Results

2314 participants from PWID, general clinic attendees tested for HCV. 1149 tested reactive on antibody. 718 have undergone confirmatory test, 683 were confirmed to have chronic infection with HCV RNA quantitative. Out of the 683, 363 came forward for liver assessment through Fibro Scan. 36% of the participants were categorized as F1 and the remaining 64% of them were F2 and above.

After post-test counseling, 226 more patients were put on treatment using direct-acting antivirals (DAAs) at a preferential price through negotiation with pharmaceutical companies. 46 patients have already been cured with SVR 12 while 71 have undetectable viral load at the end of treatment. A treatment booklet developed by CoNE has been recommended by the Government to be used in the state for government healthcare settings and is in the process of formalizing it. Advocacy work is going on to develop Standard of Protocol (SOP) for HCV screening, diagnosis and treatment.

Conclusion

PWID networks can effectively mobilize people for testing and linking to treatment. They are also best positioned to support peers to understand the infection, provide care, treatment education and allow people to take an informed decision on treatment. They can effectively also negotiate with physicians and companies for price reduction which has real time impact at individual patient level.
Optimizing use of the electronic medical record to identify, link and cure hepatitis C infected patients at UCLA Health

Mabel Kimble¹, Samantha Ramirez², Di He³, Yeonsoo Baik³, Sammy Saab³, Jeffrey Klausner¹

¹Division of Infectious Diseases: Department of Medicine, University of California, Los Angeles, Los Angeles, United States; ²Department of Surgery, University of California Los Angeles, Los Angeles, United States; ³Department of Epidemiology, Fielding School of Public Health, University of California Los Angeles, Los Angeles, United States

Background

UCLA is a complex healthcare system serving more than 500,000 patients. In 2015, UCLA Health implemented a large system-wide hepatitis C (HCV) testing and linkage-to-care initiative targeting those born between 1945-1965. We described the frequency of newly identified HCV Ab positive, HCV RNA positive cases, linkage-to-care and achieved sustained virologic response (SVR at 12 weeks’ post-treatment).

Materials and methods

We added “hepatitis C screening” status to the health maintenance section of the UCLA Health electronic medical record (EMR) for patients born between 1945-1965. The UCLA clinical microbiology laboratory provided a list of HCV Ab positive patients three times a week to an HCV navigator. The HCV navigator determined if the diagnosis was previously or newly established. The HCV navigator notified providers of HCV-infected cases via the EMR and recommended RNA testing, genotyping and in those with detectable RNA, a non-invasive test to assess liver disease severity (PROMETHEUS® FIBROSpect® II). Additionally, the HCV navigator contacted patients with detectable RNA to facilitate a Hepatology or Infectious Diseases visit. We used descriptive statistics to describe the distribution of HCV Ab positivity, HCV RNA positivity, linkage-to-care, treatment initiation and SVR (SVR; undetectable HCV RNA 12 weeks post treatment).

Results

Among patients screened, 311 patients were newly identified HCV Ab reactive. Among patients tested with HCV Ab reactive result, 104 were newly identified HCV RNA positive. The distribution of race/ethnicity among chronically infected patients leads with Blacks 59% (22/37), followed by Latinos 37% (10/27) and Whites 33% (57/174) (p < .01). Among RNA+ patients, 90% (94/104) completed an appointment with a specialist, and 52% (49/94) started treatment. There was a median (IQR) of 56 days (32-131) between initial screening date and treatment initiation. Finally, 100% of (35/35) patients achieved SVR.

Conclusions

The use of electronic medical record in a large urban health system optimized detection for newly identified HCV cases and facilitated linkage-to-care.

Hepatitis C virus infection, comorbidities and related risk determinants among women who inject drugs in the capital city of Nepal

Keshab Deuba¹, Upendra Shrestha¹, Bir Rawal², Rajesh Khanal¹, Tarun Paudel²

¹National Centre for AIDS and STD Control/ Global Fund Programs, Kathmandu, Nepal; ²National Centre for AIDS and STD Control, Ministry of Health, Nepal

Background

Nepal is experiencing the moderate prevalence of hepatitis C virus (HCV) infection, i.e., the estimated prevalence rate of 1.5%-3.5% of total population. Nepal is among 12 countries in the world where the estimated burden of HCV is more than 80% among people who inject drugs. The information related to burden of HCV infection is limited among women who inject drugs because of prejudice and stigma among this vulnerable population. This study aims to assess the prevalence of HCV infection, comorbidities, and related risk determinants among women who inject drugs in the capital city of Nepal.

Materials and methods

A total of 160 participants were recruited by modified network sampling from the capital city of Nepal between April and August in 2016. The sample included women at least 16 years old who had been injecting drugs for at least three months before the study period. Serum samples were taken and tested for antibodies against hepatitis C virus (anti-HCV), hepatitis B surface
antigen (HBsAg), HIV and syphilis. A structured questionnaire was used to assess risk behaviours among this group. Logistic regression model was used to evaluate the factors associated with the HCV infection.

**Results**
The prevalence of anti-HCV, HBsAg, HIV and syphilis was 22%, 2%, 9% and 8% respectively. The prevalence of HCV-HIV co-infection was 6%. The prevalence of anti-HCV infection was associated with an age older than 24 years [odds ratio (OR), 6.3; 95% confidence interval (CI), 2.7-14.9, p = 0.000], HIV sero positive status (OR 8.3, 95% CI 2.6-26.8, p = 0.000), cross border movement (Indo-Nepal border) for injecting drug use (OR 3.6, 95% CI 1.5-8.9, p = 0.005), visited outreach centre to get new syringes (OR 3.6, 95% CI 1.2-11, p = 0.022), visited HIV testing and counselling centre (HTC) (OR 3.1, 95% CI 1.7-8.6, p = 0.001) and enrolled in opioid substitution therapy (OR 3.9, 95% CI 1.7-8.6, p = 0.001).

**Conclusions**
This study demonstrated a high prevalence of HCV infection and other comorbidities among women who inject drugs. The establishment of diagnosis and treatment services for HCV infection at outreach centre and HTC would reduce the burden of HCV infection among women who inject drugs in the capital city of Nepal.

**15 Chronic hepatitis C in Burundi: what is needed to achieve elimination by 2030?**

*Rénovat Ntagirabiri*, Sarah Robbins

1University of Burundi, Kamenge University Hospital, Bujumbura, Burundi, 2Center for Disease Analysis, Lafayette, United States

**Background**
Hepatitis C virus (HCV) infection is a leading cause of liver related morbidity and mortality worldwide, responsible for more than 400,000 deaths in 2015 [1]. In Burundi, anti-HCV prevalence has been estimated to be around 8% in adults [2], one of the highest rates across the African continent [2]. With advances in research and the development of direct-acting antiviral (DAA) therapies, the possibility of an HCV cure is within reach. However, little has been done to estimate what is needed to achieve elimination in high-endemicity, low income countries such as Burundi. We analyzed the impact on liver related morbidity and mortality of achieving a 90% reduction in total viremic prevalence, by 2030.

**Materials & Methods**
An Excel-based disease progression model was developed to estimate HCV incidence, prevalence, morbidity, and mortality in Burundi. Two scenarios were developed: Base 2016 summarizes the current standard of care and Elimination, which was designed to achieve a 90% reduction in total viremic infections, while also reaching the World Health Organization Global Health Sector Strategy Goals for Hepatitis [3]

**Results**
In 2016, it was estimated that approximately 396,000 individuals were infected with HCV and approximately 40% of the total infected population was aged 20 to 39. Under the current treatment paradigm, HCV infections are assumed to decrease slightly (approximately 10%) by 2030 due to the continued treatment of HCV-infected patients and the mortality in the older-aged patient population, while HCV-related morbidity and mortality is expected to increase 40 to 45%.

In order to reach achieve Elimination by 2030, the number of treated patients was expanded to 35,000 annually by 2025. Additionally, the number newly diagnosed will reach 34,000 annually by the same year in order to capture patients eligible to treat. By 2030, 45,900 infections will remain in country. HCV related morbidity and mortality is also expected to decline by 85% compared to Base 2016.

**Conclusion**
HCV-related disease burden is forecasted to increase significantly by 2030. Achieving Elimination of HCV is obtainable if increases in both diagnosis and treatment are introduced. A strategy, grounded in the most representative epidemiological data is needed if elimination is to be achieved.


16
Impact of methadone use on HCV seroconversion of a cohort of drug addicts followed in a Harm Reduction Unit

Jorge Valencia La Rosa¹, Pablo Ryan², Alejandro Avaro-Meca³, Jesus Troya³, Jorge Gutierrez¹

¹Harm Reduction Unit of the Office of Public Health, Madrid, Spain, ²Hospital Infanta Leonor, M, Spain, ³University“ Rey Juan Carlos”, Madrid, Spain

Background
There are presently an estimated 3 to 4 million new infections per year, with illicit injection drug use being the major risk factor for HIV. Although interventions such us sterile syringe exchange programs have been shown to decrease new HIV infection, the results have been inconsistent when it comes to prevention of HCV infection in IDU (intravenous drug users). We sought to examine rates of HCV infection and the possible link with methadone use among IDU in our HRU (Harm Reduction Unit) of Madrid.

Materials and methods
Sample were based in an Access database collect between 2013 and 2016. As an initial step, Kaplan- Meier methods were employed to estimate the global incidence density reported at 95% CIs calculated with normal approximation given the frequent events. The date of HCV seroconversion was estimated as the midpoint between an individual’s last negative and first positive test. Participants remaining persistently HCV negative were censored at the time of their most recent available HCV antibody test result prior to December 2016. Pearson’s chi-squared test was used to compare categorical variables. Analysis were conducted using R Software, the threshold for statistical significance was set at p< 0.05.

Results
During the study period, 954 drug users were screened for HCV at least once in the follow up period (screening is part of the initial harm reduction intervention in the HRU). Patients with only one serology (504 drug users) or patients who tested positive at baseline (315 IDUs), were excluded from the analysis. At baseline 127 drug users were HCV negative and had at least one follow-up HCV test and were therefore included in the analysis of HCV incidence. Overall, the baseline HCV prevalence was 33,01%. After 4 years of follow-up, and 135 PY; 28 seroconverted and tested positive for HCV. Incidence density for HCV seroconversion for this entire sample was 20,7 (95% CI:14,3- 29.72) per 100 person-year and methadone was not a predictor factor in time to seroconversion HR 1.27 (IC0.60-2.66) p 0.532. Kaplan Meier curves by methadone use are shown in graph 1. The median age was lower in the seroconverts p 0.011 (table 1) and in the regression analysis the age (for 10 years older) was protective factor in the time to seroconversion: HR 0.93 (CI 0.87-0.98) p 0.011.

Conclusions
Despite preventive efforts in our URD, there is a high incidence of HCV seroconversion. Methadone did not influence in the seroconversion; however, the age (per 10 years old) was a protective factor for seroconversion. New strategies are necessary to implement mainly in young injectors.

17
Altered miR-34a expression in HIV-HBV coinfected patients

Adelina Rosca¹,², Aura Temereanca¹,², Cristian Achim⁴, Luminita Ene³, Professor Simona Ruta¹²

¹Carol Davila University Of Medicine And Pharmacy, Bucharest, Romania, ²Stefan S. Nicolau Institute of Virology, Bucharest, Romania, ³Dr Victor Babes Hospital for Infectious and Tropical Diseases, Romania, ⁴University of California San Diego, La Jolla, USA

Background
miR-34a was shown to be involved in HBV related liver fibrosis and cancer development, through the apoptotic pathway of miR-34a/ SIRT1/p53. As the risk of end stage liver disease and hepatocellular carcinoma is increased in HIV-HBV coinfected patients, the aim of this study was to investigate the relation of miR-34a expression with HBV status in a group of people living with HIV.

Materials and methods
Expression levels of miR-34a were measured by quantitative real-time PCR (Thermo Fisher Scientific- TaqMan® MicroRNA Assays) and normalized against RNU43 (a small-nucleolar RNA) levels. The correlation between miR-34a levels and the participants’ HBV status and hepatic markers were evaluated.

Results
101 HIV positive patients (44.6% males, median age 24 years) were included in the study. 50.5%
(n=51) were HBsAg positive with 10 HBeAg positive patients. 18.8% (n=19) patients had HBV recovery markers (anti-HBc and anti-HBs positive).

In the HBsAg carriers group, only 9.8% (n=5) of the patients had significant liver fibrosis (as assessed by the AST to Platelet Ratio Index (APRI), >1), 23.5% (n=12) showed signs of hepatic cytolysis (transaminases over the upper normal limit) and 10.9% (n=11) patients had high HBV plasma viral load (viral DNA over 1000 IU/ml). Only 7 patients (13.7%) presented Lamivudine resistance mutations. Currently, 47.1% of the chronic HBsAg carriers receive Lamivudine, 19.6% receive Tenofovir, 19.6% receive both Lamivudine and Tenofovir and 13.7% receive no dually active HIV-HBV medication.

Both the HBsAg chronic carriers and the patients with past HBV infection had significantly higher expression levels of miR-34a than the HIV monoinfected participants, p=0.04 (median miR-34a expression 0.007 vs. 0.004) and p=0.03 (median miR-34a expression 0.001 vs. 0.004), respectively. In HBsAg carriers miR-34a expression was higher in patients with hepatic cytolysis, p=0.02 (0.009 vs. 0.005) or cholestasis, p=0.03 (0.09 vs. 0.005) compared with patients with no sign of liver damage. The presence or type of dually active HIV-HBV treatment had no impact on the expression levels of miR-34a.

Conclusions
A modified miR-34a expression is present in HIV-HBV coinfected patients and correlated with the level of hepatic cytolysis. miR-34a could be included in a panel of early biomarkers for liver damage and the development of liver cancer.

18
Demographic, epidemiological, clinical, severity, and treatment response characteristics of hepatitis B Egyptian patients

Gasser El Azab¹, Maha Elsabaawy¹, Mahmoud El Tahawy¹, Mohammed Elshefery², Soha Elshenawy³
¹National Liver Institute, Shebin El Koom, Egypt

Background
In era of HCV eradication by the direct antivirals, Egypt had to pay attention to hepatitis B virus (HBV) two millions. Aim: characterize epidemiological, demographic, clinical, severity and treatment responses of chronic HBV Egyptians. Methods: This observational cross-sectional study was conducted on 183 chronic HBV Egyptians.

Results
HBV positive HBe Ag represented 18.04% of the whole HBV cohort. They were younger (31.09 ± 8.542 to 38.22 ± 10.6 years) (p<0.05), with higher alanine aminotransferase (ALT) (84.91±67.855 to 53.75± 55.575 U/L) (p<0.05), basal viral loads (3.58 × 108 ± 16.49× 108 to 1.74× 106 ± 10.1 × 106 IU/mL) (P<0.05) particularly in chronic active carrier states. unsafe personal hygienic procedures (sharing toothbrushes and shaving razors) were the main infective routes (73.7%). coinfection with hcv was documented in 14.7%, and in 16.3% with schistosomal infestation, while hdv coinfection was reported in 8.9% of the studied cohort. radiologically, 44% of cases were cirrhotic with splenomegaly in 20.7%, while histologically, 40.2% were proved to have significant pathology (A2, F2>2). 70.5% were subjected to Lamidine with unfair response (16.3%) occurred mainly in positive HBeAg group (71.6%). Multivariate analysis had verified positive HBeAg status and Schistosomiasis to be associated with poor response to oral antiviral therapies (p<0.05).

Conclusion
More classified Governmental censorship on health care notably private organizations along with viral awareness levitation programs is promptly mandated. Additionally, the reported poor response to oral antivirals in HBe Ag positive patients; had assigned interferon as a first line treatment option for this cohort.
19

Organization of hep C treatment in community based integrated care clinics as a perspective form of access to treatment for PLWH and key populations

Oksana Savenko¹, Vladimir Kurpita, Iryna Ageeva

¹All Ukrainian Network Of Plwh, Kyiv, Ukraine

Background
Patients with HIV co-infection, representatives of key populations and OST patients have high-priority to HCV-treatment. Treatment of these patients is most difficult because it is related to the behavioural features and concomitant medicaments (ART, OST). The representatives of the key populations and with co-infection had cases of stigma and discrimination in public institutions. Also, Ukraine provides the reform of the health care system and many State AIDS centers will be reorganized.

Materials and methods
The Hep C treatment of PLWH, OST patients and key populations in Ukraine is organized in community based integrative care clinics "100 percentage of life" with support from All-Ukrainian Network of PLWH. Community based integrated care clinics (7 in the different Ukrainian regions) are a new form of medical care in Ukraine. These are the first private clinics, were created by PLWH community in Ukraine. Target groups of the clinics: PLWH, IDUs, OST patients, patients with Hep C. The clinic offers the following services: diagnostic procedures, including HIV and Hep C diagnostic, ARV and OST therapy based on clinics, consultations of hematologist, infection diseases specialist, gynecologist, paediatrist, treatment of all types of the abuses, stationary department. The clinics cooperate with private and state laboratories and can provide all spectrum of analyses for Hep C and co-infection HIV/TB treatment. As a result of the cooperation of clinics with the network of the largest private laboratory in Ukraine, we introduced a 50% discount on all tests for diagnosis and treatment of HCV for representatives of key populations and patients with co-infection in all Ukrainian regions. The clinics cooperate with NGOs and provide Special Patients School for Patients with HepC and co-infection, Self-Assistance Groups, including Groups for Women with Hep C and co-infection, carry-out the psycho-social support of treatment and following control of the treatment efficiency. Advantages of the community based clinics: integrated treatment (HIV/Hep C/Tb), necessary permanent services (ARV, OST) in one place, formation of the sustainable HIV/Hep C treatment adherence, control of the HIV/Hep C treatment effectiveness, support from patients community, consultations of various specialists in one place, prevention of the complications, access to services, quality, friendliness.

Results
Treatment projects for HCV and co-infection patients: 350 DDA (Harvoni) treatment courses from the EQUIP project and over 450 courses under a joint project with Gilead realize during 2017-2018. Also, the clinics conduct the treatment projects with funding from local budget. The representatives of PLWH and key-population have access to Hep C diagnostic.

Conclusions
The creation and development of community based integrated care clinics is a new form of the Hep C/HIV treatment organization. Clinics can be recommended for the provision of Hep C and Hep C /HIV access to treatment for key populations, PWH and patients with co-infection.
Cost-effectiveness of treating hepatitis C in Seychelles with direct-acting antivirals as compared to no treatment

Naomi Ferguson¹
¹Ministry of Health, Seychelles

Background
Approximately eighty million people around the world are living with hepatitis C, and 700,000 people die every year from hepatitis C related complications. Since 2014, oral medications called directly-acting antivirals (DAAs) have been available for curative treatment. In Seychelles, a total of 777 cases of hepatitis C were reported from 2002 to 2016, but up to mid of 2016, the cases were not being treated. Treatment with DAA Harvoni, a combination of sofosbuvir and ledipasvir (SOF/LDV), is now being offered conditionally to those at low risk of re-infection. The aim of this study is to establish cost effectiveness of treating all cases of Hepatitis C in Seychelles with Harvoni, as compared to no treatment.

Materials and methods
A systematic review was carried out, using MEDLINE, Embase and NHS-EED. Data was extracted from the identified studies, including author, year, title, country, population, intervention and comparators, method (time horizon, perspective, model, clinical data source, cost data source, outcome measures, discount rate), results, and discussion. Evidence from the systematic review was used to populate an economic model to calculate cost-effectiveness from Seychelles’ Government perspective. The population characteristics were based on the HCV cohort data from Seychelles. The model structure was also informed by the systematic review and an accompanying grading of economic models using the Consolidated Health Economic Evaluation Reporting Standard (CHEERS) checklist. The economic model used was a Markov model, using a lifetime horizon and taking a payer’s perspective. Costs were discounted at 3% per annum. Outcome measures included quality adjusted life years (QALYs). Costs and QALYs were used to calculate incremental cost effectiveness ratios (ICERs).

Results
Harvoni, was found to be cost-saving in Seychelles HCV cohort, as compared to no treatment, with an ICER of € -753.65/QALY. The treatment was also cost-saving when stratified by gender, with the ICER of male and female being € -783.74/QALY and € -635.20/QALY, respectively. These findings were robust to probabilistic sensitivity analysis.

Conclusion
Treating hepatitis C cases in Seychelles is cost-saving. These results will help inform the policies on strategies to eliminate hepatitis C in Seychelles.
21

The epidemiological landscape of hepatitis B virus (HBV) infection in Uganda: the current and future disease burden

Sarah Robbins¹, Kenneth Kabagambe², Kenneth Christopher Opio³, Betty S. Apica³, Emmanuel Seremba⁴, Ponsiano Ocama²

¹Center For Disease Analysis, Lafayette, United States, ²National Organization for People Living with Hepatitis B, Uganda, ³Department of Medicine, Makerere University College of Health Sciences, Uganda, ⁴Mulago National Hospital, Division of Gastroenterology, Uganda

Background

Hepatitis B virus (HBV) infection is of growing concern, responsible for almost 70% of all viral hepatitis deaths in 2015 [1]. Africa is home to some of the highest rates in the world. In the eastern African country of Uganda, varying prevalence rates have been reported, from ~4% in the Southwestern region to almost 25% in Northeastern Uganda [2]. More so, Hepatitis B is responsible for 80% of all liver cancers reported in Mulago hospital, the main national hospital in Kampala [3]. In order to develop a comprehensive HBV control strategy, the current epidemiological landscape must be identified. We aimed to access the current and future disease burden of HBV through 2030.

Materials and methods

An Excel-based disease progression model was developed to quantify the HBV-infected population by disease stage, age and sex. HBV-related morbidity and mortality was forecasted from 2016 through 2030. Assumptions and transition probabilities are based on published literature.

Results

In 2016, it was estimated that approximately 2.8 million individuals, or 6.9% of the population, was infected with chronic HBV. Under the current treatment paradigm, HBV infections are estimated to decrease slightly, to approximately 2.6 million cases by 2030. However, due to low diagnosis and treatment rates, HBV-related morbidity and mortality is expected to increase over the next fifteen years. By 2030, the number of decompensated cirrhosis patients will increase by over 30% while hepatocellular carcinoma cases are forecasted to increase by more than 45% by the same year. HBV-related mortality is also forecasted to increase by 40% by 2030.

Conclusion

HBV-related morbidity and mortality are forecasted to increase between 30 to 45% over the next decade. A HBV control strategy, grounded in epidemiological data, is needed in order to reduce the health strain caused by HBV in Uganda.


22

Characteristics of patients treated with Direct Antiviral Agents (DAA) in a Spanish tertiary hospital

Sergio Ferra Murcia¹, Antonio Collado Romacho¹, María Carmen Gálvez Contreras¹, Felipe Díez Garcia¹

¹Infectious Diseases Unit, Internal Medicine Service. Torrecardenas University Hospital, Almería, Spain

Background

We plan to analyse the characteristics of HIV/VHC co-infected patients who have been treated with direct-acting antiviral drugs (DAA) in an interferon-free therapy in our centre since February 2015 to June 2016.

Materials and methods

Retrospective descriptive study. Reviewing the clinical history of HIV/VHC co-infected patients treated with DAA in our centre. Statistical analysis of variables such sex, age, risk factors, HCV-genotype and CD4 counts was performed using the SPSS statistical software package release 22.0 (IBM, Chicago, IL, USA).

Results

A total of 100 different treatments corresponding to 98 HIV/HCV co-infected patients on follow-up at a tertiary reference hospital in Almería (Andalusia, southern Spain) who received DAA therapy were included in the analysis. Seventy-three (73%) were male. Forty-six (46.9%)
had been previously treated with pegylated interferon and ribavirin (PR), of which only 11% had had a partial response and the rest were null responders. Seventy (70%) were HCV genotype GT-1 (1a: 27%, 1b: 10%, 1 without subtype: 33%) GT-3 14% and genotype GT-4 16%. Fourteen (14%) used opioid substitution therapy (mainly methadone). Only 2 patients had HBsAg positive and 35% had an AIDS defining disease. The mean CD4 count at the start of treatment was 550/mm³ [typical deviation (SD) of 312.8/mm³], after 12 weeks of sustained viral response (SVR) at 602/mm³ (SD of 312.6/mm³). Baseline median of 507/mm³ (after 12 weeks: 535/mm³). All patients underwent pre-treatment Fibroscan(R) concluding that 17.5% had a grade of fibrosis F0-F1 (<6 kPa), 29.9% F2 (6.1-9.4 kPa), 29.9% F3 (9.5-14.5 kPa) and 22.7% F4 (>/= 14.6 kPa). The mean stiffness at the beginning of treatment was 14.35 kPa (SD +/- 12.3 kPa). At the end of treatment, the mean stiffness obtained by Fibroscan(R) was 12.5 kPa (SD +/- 12 kPa). Forty-two (42%) were underwent treatments that included RBV. The most used combination was Sofosbuvir/Ledipasvir (SOF/LDV) +/- RBV by 32%, followed by 3D +/- RBV in 25% of cases. Of the series, 95.7% had successfully completed the treatment, with 2 premature discontinuations [none of them about adverse events (AE); one reached SVR]. One patient died due to no hepatic causes. Sixty-eight (68%) were undetectable at week 4 of treatment, 97.8% at week 8 of treatment and 98.9% at end of treatment. On intention to treat analysis (ITT) the rate of SVR was 96% [98% on directly observed therapy (DOT)]. Only 2 patients had a relapse (2%); a non-cirrhotic GT-1a patient treated with Sofosbuvir + Daclatasvir x 12w and a non-cirrhotic GT-3a patient treated with Sofosbuvir + Daclatasvir x12w) and none had virological failure during treatment. No patient had any severe adverse event (SAE) and none had stopped therapy from any AE.

Conclusions
In our series, DAA interferon-free regimes are quite effective in HIV/HCV co-infected patients (ITT: 96% of SVR; DOT: 98% of SVR), regardless of fibrosis degree, cirrhosis, opioid substitution therapy, sex, PR pre-treatment or CD4 count. Both relapsed patients were re-treated and achieved SVR. No SAE was observed and no premature discontinuation was observed because any kind of AE.

SVR12 versus SVR24 as a response evaluation endpoint in chronic HCV Egyptian patients treated by direct acting anti-virals

Khalid Gameel¹, Maha Elsabaawy¹, Mahmoud El Tahawy¹, Talaat Zakareya¹, Marry Albert², Marwa, Fekry³
¹Departments of Hepatology, National Liver Institute, Shebin El Koom, Egypt, ²Departments of Clinical pathology, National Liver Institute, Shebeen El-Kom, Egypt, ³Departments of Community medicine, National Liver Institute, Shebeen El-Kom, Egypt

Background
Hepatitis C infection represents a major national health problem in Egypt. Achievement of sustained virological response 12 weeks post treatment (SVR12) replaced SVR24 as an effective primary end point of response in most guidelines. Aim: to judge the concordance between SVR12 and SVR24 among HCV treated Egyptian patients.

Results
91 patients received SOF+ Interferon (IFN)+Ribavirin (RV) for 12 weeks, 52 patients received SOF+RV for 24 weeks and 56 patients received SOF+ simeprevir (SIM) for 12 weeks. The concordance between SVR 12 and SV R24 was found to be 96.5% for the whole population study, SVR24 with positive predictive value (PPV) 96.4%. Regarding treatment groups it was found to be 95.6 % for SVR24 in SOF+IFN+RV treated patients, 94.2% in SOF+RV treated patients and 100% concordance in SOF+SIM treated patients with insignificant sorting values (p-=0.2). In spite of non-significance, the reported 7 relapsers (3.5%) were mainly males (5 cases, p=0.9), naïvely treated (5 cases, p=0.6), achieved RVR (5 cases, p>0.005), with advanced fibrosis (F4) by fibroscan (5 cases, p = 0.7). Regression analysis failed to detect any predictors of relapse.

Conclusion
In spite of the high grade of concordance between SVR12 and SVR24, the reported rate of late relapsers necessitates the backward commitment to SVR24 as a reliable primary end point of treatment response evaluation.
HIV/HCV linkage to care in our difficult to reach community

Cordella Lyon¹

¹Baptist Hospitals Of Southeast Texas, Beaumont, United States

This poster is to highlight the importance of partnerships in addressing public health issues to provide much needed health care for patients who are disproportionately impacted, and most difficult to reach.

Issue: Baptist Hospitals of Southeast Texas has implemented routine HIV/HCV screening in their emergency department, and inpatient care settings. To date we have conducted approximately 6000 HCV screens, and identified 207 RNA positives, and our 61,000 HIV screens we have identified over 360 HIV positives.

One of our challenges has been to ensure linkage to care for the disproportionately impacted, and difficult to reach population. As we developed our effort we knew we might encounter the following: difficulty contacting patients, and patients distrust of healthcare.

Solution: We therefore developed a program that was based on private/public partnerships to leverage resources, ensure linkage to medical care, and develop appropriate educational opportunities for the public.

Method: Partner with the local health department, and FQHC’s to host monthly chronic disease management education programs: Beaumont Community Health Information Program (CHIP)

Baptist sends messages to patient who have been screened, but not linked to care. Our goal is to identify the highly motivated to attend our meetings, and in the process we will provide HIV/HCV disease education updates on the advancement in treatment, overview on local partners who provide medical care for HIV/HCV, address questions or concerns, provide on site medical appointments for those who are HIV and or HCV positive.

Partners: Baptist Hospitals of Southeast Texas, Texas Department of State Health Services, Gilead Sciences Inc, City of Beaumont Health Department, Walgreens, UT Physicians Group, Triangle Area Network, Legacy Community Health Center.

Capacity to report on mortality attributable to chronic hepatitis B and C infections by member states: an exercise to monitor progress toward viral hepatitis elimination

Guilherme Duarte¹², Chris J. Williams²³, Paula Vasconcelos¹, Paulo Nogueira¹

¹Direção-Geral da Saúde, Lisboa, Portugal, ²European Programme for Intervention Epidemiology Training (EPIET), ECDC, Stockholm, Sweden, ³Public Health Wales, Cardiff, United Kingdom

Viral hepatitis is a leading cause of death worldwide, 98% of deaths being from hepatitis B and C (HBV/HCV) late outcomes. WHO set targets for the elimination of viral hepatitis by 2030, including a 65% reduction of HBV/HCV associated mortality. The core 10 indicator (C10) proposed to monitor the progress requires data on mortality from hepatocellular carcinoma (HCC), cirrhosis (CIR) and chronic liver disease (CLD) defined through specific ICD10 codes. Mortality figures need to be adjusted with proportion of HBV/HCV among deceased cases (attributable fraction, AF).

We investigated the availability of data required for calculating C10 and we estimated a figure for EU/EEA.

We retrieved from regional and national databases reported numbers of deaths from HCC, CIR and CLD and from literature the available AF estimates. We critically appraised the quality of data highlighting gaps in monitoring capacity. We estimated mortality attributable to HBV and HCV, for EU/EEA countries in 2010-2015.

Mortality data are available for 30 countries (except Iceland). Accuracy by ICD10 codes vary, overall 60% of national sources can report the cause of death with specificity required by WHO. AF estimates are available for 12 countries (approx. 40%); no AF estimates available for CLD. Deaths attributable to HBV/HCV were 292600. HCV deaths were 221428, 3.11 times higher than HBV.

While national sources may produce good quality mortality data, regional sources seem unfitted for
monitoring C10. Attributable fraction estimates are sparse, outdated and prevent reliable C10 calculations. Improvement of mortality reporting by ICD10 codes is highly needed for measuring C10 indicator. Studies measuring AF on national and sub-national levels are warranted. Regional/global sources need re-shaping/restructuring if they are to monitor C10.

26
Hepatitis prevention, control, and elimination program in Mongolia: a model for eliminating viral hepatitis in low and middle income countries with high burden of hepatitis related morbidity and mortality

Naranbaatar D. Dashdorj1,2,3,4,5, Naranjargal J. Dashdorj1,3,5, Andreas Bungert1,2, Dahgwahdorj Yagaanbuyant1,3,6,7, Zulkhuu Genden1,3,6, Davaadorj Duger3,7,8

1Onom Foundation, Ulaanbaatar, Mongolia, 2Mongolian Academy of Sciences, Ulaanbaatar, Mongolia, 3Mongolian Society of Hepatology, Ulaanbaatar, Mongolia, 4Mongolian Laboratory Network, Ulaanbaatar, Mongolia, 5Medical Information Technology Association of Mongolia, Ulaanbaatar, Mongolia, 6Liver Center, Ulaanbaatar, Mongolia, 7Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia, 8Mongolian Gastroenterology Association, Ulaanbaatar, Mongolia

Mongolia has the world’s highest rate of liver cancer mortality—nearly eight times the global average. Prevalences of chronic hepatitis B, C, and D in Mongolia are at an endemic level and constitute the main cause for Mongolia’s world-leading liver cancer mortality rate, which has been steadily increasing over the last decade. At the moment, liver cirrhosis and hepatocellular carcinoma (HCC) mortalities account for 15% of total annual mortalities in Mongolia. In short, the hepatitis endemic is wreaking a havoc in Mongolian society. To tackle this overwhelming burden of hepatitis in Mongolia, the Onom Foundation, Mongolian Gastroenterology Association, and Mongolian Society of Hepatology initiated the Hepatitis Prevention, Control, and Elimination (HPCE) Program on September 8, 2014. The HPCE Program in Mongolia is a comprehensive national hepatitis program that consists of three intrinsically inter-dependent campaigns with specific focuses on prevention, screening, and treatment. In addition, the HPCE Program includes the Comprehensive Research Component as a critical program element that facilitates usage of data-driven approaches in its implementation and enables an evidence-based decision-making in formulating right policies and regulations. Thanks to the persistent and unwavering effort of the above-mentioned organizations, the Parliament of Mongolia officially adopted the HPCE Program - ӨПӨГ БҮТЭН МОНГОЛ УНДЭСНИЙ ХӨӨТӨЛӨӨР into the 2016 - 2020 Action Plan of the Government of Mongolia (GoM) on September 9, 2016. The MISSION 2020 of the HPCE Program is to eliminate HCV in Mongolia by 2020 and to significantly reduce hepatitis-induced liver cirrhosis and HCC mortalities, and these two overarching goals were explicitly stated in the 2016 - 2020 GoM Action Plan. Following this very concrete mandate from the Parliament of Mongolia, the Cabinet of Ministers approved the detailed plan for the HPCE Program on April 12, 2017 using a blueprint that was developed by the Onom Foundation. In doing so, the GoM allocated MNT226Billion or US$96MM for the HPCE Program through 2020. It is the largest amount of funding ever allocated for a national program, demonstrating the full commitment of the GoM. On May 5, 2017, the GoM organized the nationwide public launch of the HPCE Program. Prime Minister Erdenebat opened the main event in Ulaanbaatar, the capital city. With this nationwide opening, the General Population Hepatitis Screening was launched around the nation to identify hepatitis infection status of every individual 15 years of age or older by the end of 2018 and to register their status in the national database. As of July 15, 2017, branded Sofosbuvir/Ledipasvir, four kinds of generic Sofosbuvir/Ledipasvir, and a generic Sofosbuvir+Daclatasvir are available in Mongolia at price of as low as US$40 (generic Sofosbuvir/Ledipasvir) per month after the subsidies from the Public Health Insurance Fund. In addition, the Public Health Insurance Fund provides two free-of-charge HCV viral load testing under the HPCE Program. According to analysis of randomly selected HCV patients received treatment, SVR in real-life situations is around 98%. Finally, it should be emphasized that the HPCE Program in Mongolia will serve as a model for other countries in their fight against viral hepatitis.
Can patient groups lead diagnosis and treatment in prisons of resource limited settings? We are doing it!

Nalinikanta Rajkumar¹, Duroi Chongdur Rimunchung²
¹Community Network For Empowerment (CoNE), Imphal East, India, ²Community Network for Empowerment (CoNE), Imphal East, India

Background
Prevalence of HCV can be as high as 98% among PWID in Manipur, India. Drug related crimes sentences PWID or sometimes PWID are put in prison for drug treatment due to lack of information among family members. Healthcare services in the prison are extremely limited although inmates who have a PWID background are aware and conscious of HCV to some extent. Given the high prevalence and inmates staying for longer duration compared to HCV treatment, CoNE along with the prison authorities started diagnosis and treatment of PWID inside the prison.

Material and methods
CoNE approached prison authorities with local information on HCV and healthcare need of inmates. Prison authorities in Imphal Central Jail agree to organize HCV testing camps in phases of 30 participants in each camp. Materials required were met with shared responsibilities. A local private laboratory provided technical support for testing and serological test were provided free to cost while HCV RNA was at preferential pricing. An NGO working in the prison help identify number of PWID inside the prison, spoke to them and during the interpersonal skill session and motivated them. CoNE provided pre & post-test counselling. Prison authorities contributed medical manpower for monitoring of treatment in consultation with our physician. Our main physician provided his time and effort pro bono. Sofosbuvir & Daclatasvir combination therapy is given to patients who are RNA quantitative positive. The medicines are purchased from donation of local philanthropist and supporters of CoNE.

Results
In the first phase, 30 participants were identified from 300 prison inmates belong to PWID community to take part in the awareness camp. 27 of them voluntarily tested HCV antibody test out of which 16 were antibody reactive. HCV RNA quantitative test was conducted on the 16 antibody reactive patients and 13 were confirmed to have chronic HCV infection. LFT, KFT & CBC were done for these 13 inmates to calculate the APRI score for liver staging assessment. After post-test counselling and considering 1.5 as APRI score cut off value. Sofosbuvir & Daclatasvir were given for 12 weeks to inmates having score of below 1.5 and 24 weeks to those inmates with score of more than 1.5.

Conclusions
Community organization can strongly demonstrate that HCV treatment is possible inside the prison with simplification of diagnostic through mobilization of different stake holders. The community of PWID can also win hearts and make positive contributions in the public health response. This underscores the need to involve patient and at risk groups in the effort to eliminate viral hepatitis C.
Gilead Sciences’ support of global efforts toward elimination of hepatitis C virus

Nika Sajed¹, Kacy Hutchison¹, Lorenzo Rossaro², Richard Haubrich³, Diana M. Brainard⁴, Patrick McGovern⁴, Daniel O’Farrell⁴, Korab Zuka⁴, Mark Snyder⁴, Betty Chiang⁴, Nelson Cheinquè⁴, Bruce Kreter⁴

¹Gilead Sciences, Foster City, United States

Background

Gilead Sciences, Inc. supports the efforts of government agencies, professional and community-based organizations, payors, and healthcare providers (HCPs) who have declared their intention and commitment to work toward the elimination of hepatitis C virus (HCV) around the world.

Materials and methods

Multiple Gilead departments support programs related to HCV screening, access, and linkage to care (LTC).

Results

The FOCUS program partners with health systems, governments, and harm reduction organizations to build scalable and sustainable HCV screening models and innovative LTC paradigms. In 2016, 120 FOCUS partners supported 575,000 HCV antibody screening tests in 65 cities/counties.

Through investigator-sponsored research (ISR) and external collaborations, the company supports global HCV demonstration and implementation science projects aimed at elimination in high-risk populations and geographies. In 2016, the HCV ISR program approved 10 screening and LTC studies and in 2017, we added a number of studies investigating HCV elimination efforts in HIV/HCV co-infected populations. Gilead is supporting several pilot nationwide elimination programs, including: i) Iceland, where Gilead is providing treatment for all HCV patients according to Icelandic guidelines over the next 3 years; and ii) Georgia, where Gilead has provided treatment for over 40,000 HCV patients. Gilead is also supporting several key initiatives in Australia related to its nationwide elimination program.

Conclusions

Gilead is committed to supporting strategies toward HCV elimination through partnerships with governments, professional societies, community-based organizations, and HCPs.

Corporate Grants supports the efforts of community-based organizations and public health entities to educate their constituents about HCV and addresses barriers to care. Gilead’s Access team collaborates with regional partners to introduce high-quality, branded HCV drug in low- and middle-income countries, and generic drug manufacturers to produce high-quality, low-cost generic versions of HCV medicines for developing countries.

The Independent Medical Education Department (IMED) supports medical education programs that expand the knowledge and skills of HCPs to manage HCV. To date, IMED has reached over 28,000 HCPs in HCV elimination-related programs.
One-step screening of viremic HCV infection from dried blood spots among people who inject drugs: feasibility and usefulness of its implementation in harm-reduction centers in Spain

Verónica Saludes¹, Cinta Folch², Adrián Antuori², Núria Ibáñez⁴, Jordi Casabona²,³, and Elisa Martó¹,²; HepCdetect II Study Group.

HepCdetect II Study Group: Laia Gasulla⁴, Xavier Majó⁴, Noemí González⁵, Sonia Cebrián⁴, Jaume Minguell⁷, Altor Remírez⁶, L. Fernández²,³, Rafael Muñoz³, Jordi Hernández¹, Lurdes Matas¹,².

*corresponding author
¹Microbiology Service, Germans Trias i Pujol University Hospital and Research Institute (IGTP), Badalona, Spain. ²Biomedical Research Networking Centre in Epidemiology and Public Health (CIBERESP), Instituto de Salud Carlos III, Madrid, Spain. ³Centre for Epidemiological Studies on Sexually Transmitted Infections and HIV/AIDS of Catalonia (CEEISCAT), Catalonia Public Health Agency (ASPCAT), Badalona, Spain. ⁴Program on Substance Abuse, ASPCAT, Barcelona, Spain. ⁵El Local, Fundació IPSS, Barcelona, Spain. ⁶AIDE ONG, Terrassa, Spain. ⁷Fundació AMBIT Prevenció, Barcelona, Spain. ⁸AEC GRIS Fundació Privada, Barcelona, Spain.

Background
Simplified tests and strategies are needed in order to improve the diagnosis of active HCV infection in the community, especially among hard-to-reach populations such as people who inject drugs (PWID).

Among PWID attending harm-reduction centers, for the first time in Spain we aimed to: (i) assess the feasibility and usefulness of an alternative one-step screening and confirmatory assay based on HCV-RNA detection from dried blood spots (DBS), ii) to estimate the prevalence of active HCV infection and its determinants, and iii) to assess the level of hepatitis C awareness and linkage-to-care.

Material and methods
A cross-sectional study of current injectors attending four harm-reduction centers in the province of Barcelona was performed (n=384). Each participant underwent rapid HCV antibody testing, and fingerpenc DBS collection. DBS were shipped weekly to the laboratory at room temperature and HCV-RNA was assessed using a previously developed in-house RT-PCR assay (lower limit of detection, 541 IU/mL of blood). Epidemiological and behavioral data were collected in an anonymous questionnaire. Proportions were compared using the Pearson χ² and the Fisher exact tests. Logistic regression models were applied to determine the association between HCV infection and risk factors.

Results
DBS testing was easily implemented in harm-reduction centers. Participants were mostly male (85.6%) of Spanish origin (70.6%), with an average age of 40 years, and an average of 18.0 years of injection (19.7% being recent injectors). HCV seroprevalence was 83.9%, and the prevalence of active infection was 58.6%. Among the latter, 14.1% were not aware of their disease (33.3% among participants under 30 years of age), and 24.4% were co-infected with HIV. Of those with a self-reported previous diagnosis of HCV infection, 29.7% reported having received therapy, and 13.7% had cleared the infection. Having shared injection equipment and the injection of cocaine were associated with HCV infection (OR, 2.4; 95% CI: 1.2-4.6 and 4.0; 95% CI: 1.4-10.9, respectively, adjusted by gender and years of injection).

Conclusions
This one-step diagnosis strategy presents an easy, feasible way of substantially increasing the identification and awareness of viremic HCV infections among PWID attending harm-reduction centers. Besides, primary prevention measures through the use of sterile injection equipment, and linkage-to-care for those with a viremic infection should be reinforced. This screening strategy should be implemented at a national level as a first step to treatment, and to monitor the HCV epidemics in this collective.