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ART, Anti-retroviral therapy; HIV, Human immunodeficiency virus; TAF, tenofovir alafenamide.

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ORIGINAL ARTICLE

The British HIV Association national clinical audit 2021: Management of HIV and hepatitis C coinfection

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Abstract

Objectives: We aimed to describe clinical policies for the management of people with HIV/hepatitis C virus (HCV) coinfection and to audit routine monitoring and assessment of people with HIV/HCV coinfection attending UK HIV care.

Methods: This was a clinic survey and retrospective case-note review. HIV clinics in the UK participated in the audit from May to July 2021 by completing an online questionnaire regarding their clinic's policies for the management of people with HIV/HCV coinfection, and by contributing to a case-note review of people living with HIV with detectable HCV RNA who were under the care of their service.

Results: Ninety-five clinics participated in the clinic survey; of these, 15 (15.8%) were regional specialist centres, 19 (20.0%) were HIV services with their own coinfection clinics, 40 (42.1%) were HIV services that referred coinfected individuals to a local hepatology service and 20 (21.1%) were HIV services that referred to a regional specialist centre. Eighty-one clinics provided full caseload estimates; of the approximately 3951 people with a history of HIV/HCV coinfection accessing their clinics, only 4.9% were believed to have detectable HCV RNA, 3.15% of whom were already receiving or approved for direct-acting antiviral (DAA) treatment. In total, 29 (30.5%) of the clinics reported an impact of COVID-19 on coinfection care, including delays or reductions in the frequency of services, monitoring, treatment initiation and appointments, and changes to the way that treatment was dispensed. Case-note reviews were provided for 283 people with detectable HCV RNA from 74 clinics (median age 42 years, 74.6% male, 56.2% HCV genotype 1, 22.3% HCV genotype 3). Overall, 56% had not received

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treatment for HCV, primarily due to lack of engagement in care (54.7%) and/or being uncontactable (16.4%).

Conclusions: Our findings show that the small number of people with HIV with detectable HCV RNA in the UK should mean that it is possible to achieve HCV micro-elimination. However, more work is needed to improve engagement in care for those who are untreated for HCV.

KEYWORDS

audit, coinfection, hepatitis C virus, HIV, micro-elimination

INTRODUCTION

In the UK, there are an estimated 103 800 people living with HIV, of whom around 5–10% are believed to be antibody-positive for hepatitis C virus (HCV); those who inject drugs and men who have sex with men (MSM) are disproportionately most affected [1–3]. Prior to the availability of interferon-free treatment for HCV, people living with HIV were considered to be a 'special population' due to the poor responses to interferon/ribavirin in this group [4, 5]. However, with the advent of direct-acting antiviral (DAA) treatment for HCV, sustained virological responses to treatment are generally as high in this population as in others, and thus people living with HIV are no longer considered to be a special population [6].

The World Health Organization (WHO) has set a range of ambitious targets to support the elimination of viral hepatitis as a public health problem by 2030. These include: a 90% reduction in new viral hepatitis infections; a 65% reduction in deaths from viral hepatitis; diagnosis of 90% of those living with viral hepatitis; and treatment of 80% of eligible people with chronic HCV [7]. Given the extensive endeavours and investment required to attain these targets, it has been proposed that a focus on smaller sub-groups ('micro-elimination') may be more realistic [8–10], with people living with HIV being a key group in which micro-elimination could be feasible [11, 12]. In line with the global situation, in 2018 the British HIV Association (BHIVA) set a micro-elimination target to treat all people living with HIV with HCV coinfection in the UK by 2021 [13].

To demonstrate progress towards this target, BHIVA conducted an audit of clinic policies, and the routine monitoring and assessment of people with HIV/HCV coinfection who are attending UK HIV care during the pandemic and set out to describe clinical policies for the management of those with HIV/HCV coinfection. This was planned to take place during 2020 but was postponed to 2021 because of the COVID-19 pandemic, and slightly modified to include information about its impact.

METHODS

All UK sites known to BHIVA as providers of adult HIV care were invited to join the audit between 1 May and 31 July 2021. The audit consisted of a clinic survey and a retrospective case-note review submitted to BHIVA by an online questionnaire (see supplementary material).

For the clinic survey, each site was asked to estimate the total number of people living with HIV attending their clinic who were HCV antibody-positive and their arrangements for the management of hepatitis coinfection. Respondents were asked to detail any measures taken by their site to encourage HCV treatment and to describe the impact of the COVID-19 pandemic on their management of coinfection.

As part of the retrospective case-note review, sites were asked to submit information on people living with HIV aged 16 or over with currently detectable HCV RNA. Sites were asked to report information on the 40 most recent attenders or all such individuals, if fewer. Information collected included demographic characteristics, HCV infection management and status, and the management of liver disease.

Most questions were pre-coded, but for some, respondents could add free text which was then coded manually. Analyses are largely descriptive; median and interquartile ranges (IQR) are presented for numeric values, and percentages for categorical data. Analyses were performed using Stata v.17.0 (StataCorp, College Station, TX, USA).

RESULTS

Clinic survey

Of 95 clinics that completed the survey, 81 provided full caseload estimates, saying they saw approximately 3951 (5.8%) HCV antibody-positive individuals among 68 368 people living with HIV accessing their clinics. Of these 3951, 193 (4.9%) had detectable HCV RNA, including

TABLE 1 Arrangements for the clinical management of those with HIV/HCV coinfection among HIV clinics participating in the BHIVA Hepatitis C Coinfection audit 2021

		N	%
Service arrangement	Regional specialist or referral centre	15	15.8
	Manage via a coinfection clinic within the HIV service	19	20.0
	Referred to local hepatology service	40	42.1
	Referred to regional specialist coinfection clinic	20	21.1
	Not relevant	1	1.0
Current access to repeat HCV treatment for reinfected individuals following treatment	Confident that retreatment would be offered in most cases	71	74.7
	Retreatment might be offered in some cases depending on individual circumstances	10	10.5
	Not sure	14	14.7
Partner notification for HCV as part of routine service	Yes, both HCV and HIV	76	80.0
	Routinely for HIV but not for HCV	18	19.0
	It is done elsewhere for both HIV and HCV	1	1.0
Local provision of:	Peer support for HCV	32	33.7
	Home/community visit to encourage care engagement for people with HCV	40	42.1

Abbreviations: BHIVA, British HIV Association; HCV, hepatitis C.

122 (3.1%) who were already receiving or approved for DAA treatment. Scaling this to the estimated 103 800 people living with HIV in the UK suggests that there may be only a few hundred people with current HIV/HCV coinfection. Almost all clinics were located in England with only eight in Wales, Scotland or Northern Ireland. They reported medians of 112 (IQR: 5–37) people who had a positive HCV antibody status, one (1–3) person with a positive HCV RNA, and one (0–1) person who had been approved for treatment.

Fifteen (15.8%) of the 95 clinics were regional specialist or referral centres for coinfection, 19 (20.0%) were HIV services with a dedicated coinfection clinic, 40 (42.1%) would refer people with HCV coinfection to a local hepatology service, and the remaining 20 (21.1%) clinics would refer people to a regional specialist or referral centre. When asked about the offer of repeat HCV treatment for people who became reinfected after previously successful treatment, 71 (74.7%) clinics were confident that repeat treatment would be offered in most cases, 10 (10.5%) said that it might be offered and 14 (14.7%) were not sure. Around a third of clinics (32, 33.7%) provided peer support for those with coinfection and 40 (42.1%) provided home or community visits to support engagement with care. The majority (76/95, 80%) of clinics reported that they had a partner notification programme for HIV and HCV as part of their routine service, 18 (19%) only for HIV and one (1%) reported that this was conducted elsewhere (Table 1).

Sixty-five out of 95 clinics (68.4%) reported that they had taken specific measures to encourage HCV treatment (the 30 (31.6%) clinics that reported that they had not taken any such measures saw very few people with coinfection). Free text options in this question enabled the respondents to report more than one measure that was taken in their clinics, and thus multiple responses were observed. Clinics generally noted the importance of close working relationships with hepatology clinics, clearly defined referral pathways (39, or 41.1%), close liaison with community outreach and specialist services (16, 16.8%) and the need for flexibility around appointments, venues for care and approaches to providing DAA treatment and monitoring (14, 14.7%) (Table 2).

Regarding impact of COVID-19 on the clinics' approaches to managing people with coinfection, 75 out of 95 of the clinics (78.9%) reported little or no impact, again because the clinics did not provide care to a large number of people with detectable HCV RNA. Of those clinics that did report an impact, clinics reported delays or reductions in monitoring frequency (8, 8.4%), treatment initiation (5, 5.3%), timing of appointments (3, 3.2%) or services generally (4, 4.2%), with others reporting changes to the way in which treatment was dispensed (5, 5.3%) and a switch to telemedicine (3, 3.2%) (Table 2).

TABLE 2 Measure to encourage HCV treatment and impact of COVID-19 pandemic towards management of people with HIV/HCV coinfection

		N	%
Specific measures to encourage uptake of HCV treatment among people living with HIV[a]	Close working relationship with hepatology (including nurses) and clearly defined pathways for referral	39	41.1
	Close liaison with community/outreach hepatitis nurses and specialist services (e.g. drug and alcohol, prison, homeless)	16	16.8
	Flexibility around appointments, venues for care and approaches to providing DAA treatment and monitoring	14	14.7
	No specific approach – very few patients	30	31.6
	Other	3	3.2
Impact of COVID-19 pandemic towards management of HIV/HCV coinfections[a]	Little or negative impact	75	78.9
	Delayed appointment	3	3.2
	Delayed/reduce monitoring	8	8.4
	Delayed treatment initiation	5	5.3
	Reduce service generally	4	4.2
	Changes to way that treatment is dispensed	5	5.3
	Switching to telemedicine rather than face-to-face visits	3	3.2
	Other	1	1.5

Abbreviation: DAA, direct-acting antviral; HCV, hepatitis C.
[a]Multiple response.

Retrospective case-note review

Of the 95 clinics that responded to the clinic survey, 63 also contributed to the case-note review (most of the remainder had no cases to report) together with a further 11 clinics. In total, the 74 clinics provided information on 283 individuals with detectable HCV RNA. The median age was 42 years (IQR: 37–49), and 211 (74.6%) were male. It was believed that the most likely modes of acquisition for HIV and HCV were injection drug use 168 (59.4%) non-chemsex drugs, 36 (12.7%) chemsex drugs, sex between men (91, 32.2%) and/or between men and women (90, 31.8%). Most people (56.2%) had genotype 1 HCV infection, with 22.3% having genotype 3. Overall, 120 out of 283 (42.4%) people had been or were receiving HCV treatment, with 63/120 (52.5%) having had previous treatment, and 57/120 (47.5%) currently being treated. However, the remaining 159 of 283 (56.2%) had not been treated and the treatment status for the other four (1.4%) was unknown. Among those currently receiving or who had recently finished treatment, drugs taken were sofosbuvir/ledipasvir with or without ribavirin (27.4%), elbasvir/grazoprevir (21.6%), glecaprevir/pibrentasvir (18.6%), and sofosbuvir/velpatasvir with or without ribavirin (15.7%) (Table 3).

Treatment was already planned for a third of the 159 people who were not currently taking HCV treatment, 11 (6.9%) had either only just recently acquired HCV and two (1.3%) had recently been diagnosed with coinfection. Among the others, the main reasons for not taking HCV treatment were generally related to the person's lack of engagement in care (87, 54.7%) and/or being uncontactable (26, 16.4%). Clinical judgment about the person's likely adherence to treatment (10, 6.3%), their risk of reinfection (7, 4.4%) or having complex clinical or treatment issues (6, 3.8%) was also noted as a reason for no treatment. Individual patient wishes not to be treated (22, 13.8%) or beliefs that the treatment would be ineffective (2, 1.3%) or toxic (3, 1.9%) were also cited (Table 3). Among those with a detectable HCV RNA despite having received treatment ($n = 62$), 17 (27.4%) had been reinfected after successful treatment, 25.8% had completed treatment but information was unavailable as to its success, 11 (17.7%) had not completed treatment, 10 (16.1%) had completed treatment but the results of blood tests were still awaited and seven (11.3%) people had started treatment but had subsequently disengaged from care or were lost to follow-up.

Staging of liver disease had been performed in 170 (60.1%) individuals (75 normal, 50 mild, 13 moderate, 22 severe fibrosis, 10 not recorded), repeated fibrosis

TABLE 3 Management of HCV infection among people living with HIV with detectable HCV RNA, case-note review

		N	%
Total number of cases		283	100.0
HCV treatment	Has been or is currently being treated	120	42.4
	Not been treated for HCV	159	56.2
	Not recorded/no response	4	1.4
HCV treatment regimen ($n = 102$ treatment in progress or started during 2018–21)	Elbasvir/grazoprevir	22	21.6
	Glecaprevir/pibrentasvir	19	18.6
	Sofosbuvir/velpatasvir without ribavirin	16	15.7
	Sofosbuvir/velpatasvir with ribavirin	3	2.9
	Sofosbuvir/velpatasvir/voxilaprevir	6	5.9
	Sofosbuvir/ledipasvir with or without ribavirin	28	27.4
	Ombitasvir/paritaprevir/ritonavir + dasabuvir with or without ribavirin	1	1.0
	Not recorded/ not stated	7	6.9
Reason for no HCV treatment[a] ($n = 159$)	Treatment is currently planned	53	33.3
	Recently acquired HCV – may clear spontaneously	11	6.9
	Recently diagnosed with HCV and/or re-engaged in care	2	1.3
	Lost to follow-up/switched clinics	1	0.6
	Individual is not engaging in care	87	54.7
	Individual is not contactable – e.g. no phone	26	16.4
	Individual is considered unlikely to adhere well to treatment	10	6.3
	Individual likely to be at significant risk of reinfection after treatment	7	4.4
	Patient has complex clinical or treatment issues	6	3.8
	Individual does not wish to be treated	22	13.8
	Individual does not believe treatment is effective	2	1.3
	Individual believes treatment would be toxic	3	1.9

Abbreviations: BHIVA, British HIV Association; HCV, hepatitis C; RNA, ribonucleic acid.
[a]Multiple response.

assessment had been undertaken in 99 (35%) over the past 18 months, and HCC screening had been undertaken in 14 out of 22 (63.6%) with severe fibrosis/cirrhosis. Other specific auditable outcomes included documentation of counselling regarding HCV transmission and safe sex (recorded in 213/283, 75.3%), and annual/biannual anti-HBs screening within 3 years among those who were successfully immunized against HBV (recorded in 103/113, 91.2%). Overall, 211 (74.6%) had been offered harm reduction support, 180 (63.6%) had a recorded enquiry/discussion about alcohol within the past 9 months, 207 (73.1%) were recorded as being vaccinated against or naturally immune to hepatitis A, and eight (2.8%) were surface antigen (HBsAg)-positive.

DISCUSSION

Our national audit has revealed that, while a sizeable proportion of people living with HIV have acquired HCV coinfection, a relatively small proportion of people remain to be treated. The reason for non-treatment was mainly related to lack of engagement in healthcare services. A greater understanding of this population, and the challenges/barriers that remain for treatment, will support further steps towards micro-elimination of HCV among people living with HIV in the UK. Our findings provide important perspectives on the challenges of achieving micro-elimination in a wider population than other previous studies conducted largely among MSM with HIV [14–20].

Due to the pandemic, a number of clinics changed their way of providing their service, distributing HCV treatment, and decreasing human resources, with delayed tests and monitoring being unavoidable. Over this time, many clinics were also forced to rapidly adapt to new conditions whereby health systems and hospitals were primarily utilized for COVID-19 care; this required many to change their arrangements for testing, monitoring and delivery of treatment. A preliminary result from an online survey conducted by WHO showed that 95% of those involved in the provision of HIV, hepatitis and sexually transmitted infection testing in 53 European countries reported a decrease in testing in March–May 2020 compared with the same period in the previous year [21]. However, such changes to services may also lead to alternative solutions in care delivery, for example through the combination of home testing and telehealth, multi-month prescribing of ART, and development of close relationships of health services with commercial companies and non-governmental organizations to support home delivery of medications [22–25].

Our findings suggest that in most cases, lack of HCV treatment was explained by a lack of engagement, the individual's perceptions of treatment (and the need for this) or clinical judgment. Lack of engagement in HCV care has been identified as a major barrier to HCV treatment initiation in other studies [26, 27]; our study did not permit a deeper understanding of the reasons for this, and future qualitative studies would be helpful in this regard. Clinical judgment from health workers has also been identified as a treatment barrier in other studies with provider reluctance to prescribe DAAs to individuals with a history of substance use because of a perceived concern about non-adherence, stigma against substance use, the risk of reinfection or abstinence policies required by healthcare providers [28, 29]. Willingness to receive treatment was affected by HCV knowledge status, with those with high HCV knowledge being more likely to be very willing to receive treatment than those with lower levels of HCV knowledge [30]. Therefore, it might be important to improve education about risks and benefits of treatment for carers and patients. An evidence review conducted by Public Health England (PHE) shows that psychosocial and educational interventions to patients and nurses might improve adherence and treatment uptake [31]. One of the studies included is a randomized controlled trial which applied four-session nurse-led behavioural intervention for HIV/HCV-coinfected individuals to overcome barriers of DAA treatment. Its findings demonstrate that individuals in the intervention group were four times more likely to prescribe the treatment compared with the control group [odds ratio (OR) = 3.85, 95% confidence interval (CI): 1.23–12.01] and three times more likely to start treatment 6 months post-randomization (OR = 3.11, 95% CI: 0.97–10.00) [32]. Moreover, in the UK setting, studies on an intervention to increase uptake of HCV testing and treatment (HepCATT) have shown a promising impact for a better HCV cascade of care [33–35].

Another important finding was on reinfection treatment, where most clinics were confident that they would be able to offer repeat treatment to most cases if required. In the UK, particularly England, HCV treatment is coordinated within Operational Delivery Networks (ODNs), which manage treatment decisions and prescribing. Within England, the government provides free DAAs for those who are newly infected or reinfected [36]. In the other devolved nations, DAA prescriptions are provided through routine clinical settings. In our clinic survey, we were not able to explore further the underlying reasons for some clinics not being able to offer treatment for those who were reinfected. However, the existing literature suggests that provider-related barriers to HCV treatment, such as limited knowledge, lack of availability and communication issues, may exist for the treatment of both new infections and reinfections [37, 38]. Peer support has been an important facilitator of the successful treatment and engagement with healthcare of people with HIV and HCV [39–42]. Our audit suggested that 32 centres provided peer support for engagement, not only for HIV but also for HCV. Although the current national standards for peer support in the UK do not specifically refer to support for HIV/HCV coinfection [43, 44], it is evident that peer support for HIV/HCV is already being implemented by many care providers and the community.

There are some limitations to our study which should be acknowledged. First, the setting of the study is in the UK, where the number of new HIV diagnoses has been declining over the past 10 years and where the proportion of people living with HIV with HCV coinfection requiring treatment is relatively small. Our findings may therefore not be generalizable to other countries with larger populations of people with HIV/HCV coinfection or different health system access. Secondly, compared with a previous BHIVA audit of HIV/HCV coinfection in 2009, fewer clinics participated in the present audit (95 vs. 140 clinics in 2009) [45]. Our audit was undertaken within the context of a pandemic, and this may have resulted in a reduction in participation by clinics which may, in turn, have introduced some bias, particularly if participating clinics had managed to treat a greater proportion of those with coinfection than non-participating clinics. However, we believe that our response rate is good given the constraints on people's time for completion of audits. We also do not have data on whether only

specific populations – such as MSM or people living with HIV – were included by each site. As a result of differences in the epidemiology of HIV and HCV in the UK, together with the fact that not all sites provide care to those with HIV/HCV coinfection, we cannot comment on the representativeness of the sample included in the case-note review. Finally, we did not collect information on whether those who had completed treatment had experienced an sustained virologic response and on the number of reinfections per person. Nevertheless, the information collected will still support the UK's continued micro-elimination efforts.

CONCLUSIONS

The small number of people with HIV/HCV coinfection in the UK should mean that it is possible to achieve our HCV micro-elimination target. Our findings suggest that most people who are HCV antibody-positive have been successfully treated. However, a small minority of people continue to have detectable HCV RNA and, of these people, a smaller group are not currently receiving treatment or do not have treatment planned. The main reason for continued lack of treatment in this group relates to problems with engagement in care, although a small minority of people also held negative views about treatment. The COVID-19 pandemic has seen creative approaches to the way that clinics provide services to those with coinfection. However, continued screening for HCV coinfection/reinfection, timely monitoring and collaborative efforts to facilitate HCV-related health promotion and support engagement in healthcare services remain important if we are to achieve our goal of treating all individuals with coinfection and preventing new HCV infections in those with HIV in the UK. Collaborative efforts between care providers and community-based individuals experiencing HIV/HCV coinfection to produce health promotion materials for people with HIV/HCV are required to increase knowledge and engagement in healthcare.

AUTHOR CONTRIBUTIONS

RPR: first author, design of work, analysis, interpretation, initial draft of manuscript and corresponding author. HC and CAS: design of work, analysis, interpretation, writing and technical editing of the manuscript and final overseeing of manuscript submission. RK, GSC, FB and DC: revision of the manuscript. All the authors agreed on all aspects of work for the final manuscript.

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CONFLICT OF INTEREST

CAS reports funding from Gilead Sciences, ViiV Healthcare and Janssen-Cilag for membership of Data Safety and Monitoring Boards, Advisory Boards and for preparation of educational materials. DC has received research grants from Gilead Sciences and ViiV Healthcare. FB has received speaker and consultancy fees from Gilead Sciences.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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