2217. Demographic Trends and Health Care Utilization Among Children With Hepatitis C Virus Infection
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Background. Hepatitis C virus (HCV) infection has received significant attention in recent years due to the ability for near universal cure, the price of therapy, and increasing incidence due to injection drug use. While the discussion largely focuses on HCV infection in adults, children with HCV are a consistent minority of patients with long-term adverse outcomes of HCV. Few studies have defined the healthcare utilization of HCV-infected children.

Objective. To define trends in pediatric HCV cases and healthcare utilization using a national administrative database.

Methods. The Pediatric Health Information Systems (PHIS) database contains inpatient encounter-level data from tertiary care pediatric hospitals in the United States. We identified pediatric HCV cases using validated ICD-9/ICD-10 diagnosis codes (070.41, 070.44, 070.51, 070.54, 070.70, 070.71, V0262, B18.2). We evaluated total cases identified, year of presentation, patient age, geographic location by state, aggregate cost of providing care and HCVcoinfection (ICD-9 code 042/ICD-10 code B20).

Results. Since 1992, there were 2,175 unique pediatric patients identified with HCV infection. Case rates were highest in patients 15–17 years with a peak of 24 cases/10,000 admissions that fell to 10 cases/10,000 in 2002 and a low of 1 case/10,000 in 2015. Alarmingly, the rate in this group was back over two cases/10,000 in 2016 and 2017. HCV case rates in children 11–14 were the second highest with more sustained peak from 1992 to 2006 and precipitous decline. There were 49 patients with HIV co-infection, with rates highest prior to 1998 (range of 6.5–18%), but since 2002 have been <2% until 2017 (2.5%). For inpatient costs, 10% of HCV patients with HIV co-infection, with rates highest prior to 1998 (range of 6.5–18%), but since 2002 have been <2% until 2017 (2.5%). For inpatient costs, 10% of HCV patients with HIV co-infection accounted for 75% of the total cost of care. In 2004–2006, total charges for 329 HCV-infected children were just over $23 million, compared with 2015–2017 when total charges for 247 HCV-infected children were $21.8 million. Comparing these two eras and adjusting for inflation, there was a 3% decline in charges per patient.

Conclusion. While the burden of inpatient HCV in children has declined since the peak in the early 1990s, there are worrisome increases detected in the last few years. A small minority of patients represent a disproportional amount of the total care provided. Early treatment of children would still likely prove cost-effective.

2218. Low Hepatitis C Treatment Rates Among Patients Screened as Inpatients at a Rural Academic Medical Center
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Background. The rise in injection drug use in the rural United States has led to an increase in admissions for injection-related conditions. Hepatitis C (HCV) infection is prevalent amongst people who inject drugs and might be diagnosed during such episodes of acute care. Linkage to care and initiation of treatment for hepatitis C in this group has been difficult, especially in rural settings lacking comprehensive care for people with substance use disorder (SUD).

Methods. We reviewed the charts of patients admitted to an inpatient service at Dartmouth-Hitchcock Medical Center (DHMC) who had positive HCV serology in 2016. We determined the proportion of patients who had follow-up testing for HCV RNA, were referred, followed up and initiated treatment for HCV by the end of 2017.

Results. In 2016, 504 inpatients at DHMC were screened with an HCV antibody test, of which 65 (13%) were positive. Of these, 50 (77%) had follow-up HCV RNA testing, resulting in 38 (76%) patients with detectable viremia. Of the 53 patients with detected (38) or unknown viremia (15), five died on the index admission, one was discharged to a hospice, 16 were referred to the DHMC hepatology (GI) clinic and 11 to the DHMC infectious disease (ID) clinic, but 20 received no referral. Thirty-two (60%) patients had an active SUD, and 7 (13%) were in remission.

Through December 31, 2017, 15 (31%) of the surviving 48 patients had no further follow-up in the Dartmouth-Hitchcock Health System. Fourteen (29%) patients followed up in the GI clinic, 11 (23%) followed up in the ID clinic and 8 (17%) had subsequent encounters in clinics for conditions other than HCV. Only 5 (10%) patients were treated for HCV and achieved sustained virologic response (SVR), all of which had followed up in the GI clinic. The odds of follow-up or treatment were independent of a history of SUD. Providers frequently deferred treatment due to ongoing substance use or a focus on more urgent medical issues. Insurance coverage for direct-acting antivirals was evolving during the study period, preventing treatment in some patients.

Conclusion. Only 10% of patients screened positive for HCV during an inpatient admission to a rural academic medical center received treatment for HCV in the year following their diagnosis. Linkage to care, patient engagement and provider perceptions have to improve to achieve elimination of HCV.

Disclosures. All authors: No reported disclosures.
2220. Wirelessly Observed Therapy with a Digital Medicines Program to Optimize Adherence and Target Interventions for Oral Hepatitis C Treatment

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Background. Real-world data on adherence to new oral hepatitis C virus (HCV) therapies are limited. Suboptimal adherence can lead to unnecessary treatment failures. Usual methods to measure adherence are inaccurate, and do not allow for opportunistic intervention. The digital medicines program (DMP) consists of DigiMeds™ (medicines with an ingestible sensor), a wearable sensor patch that confirms ingestion, the Proteus Discover™ mobile app, and secure web portal to allow for timely assessment of adherence, prevent missed doses, and maximize the likelihood of sustained virologic response (SVR), or cure. This study evaluated adherence and virologic outcomes in chronic HCV patients treated with sofosbuvir/ledipasvir (SOF/LEDV) using the DMP.

Results. All 28 subjects (age 59 ± 7 years [mean ± SD], 61% male, 39% Caucasian, 93% treatment-naïve) had HCV genotype 1; 27 completed treatment. Most (82%) had <25,000 income/year, 46% had psychiatric comorbidities, and 32% had a history of drug abuse. The DMP was used for 92% of expected days; mean ingestion adherence was 94%. Providers used the DMP data for same-day adherence interventions in 39% of patients. SVR was achieved in 26 of 28 subjects (2 had failed prior therapy). One subject who did not achieve SVR had high adherence (295%), suggesting viral resistance; the other was non-adherent (<90%). Most (92%) agreed the DMP helped them feel more involved in managing their healthcare and easy to use in their daily routine; 85% agreed the DMP helped them understand the importance of taking medications regularly. Four subjects reported four nonserious adverse events of rash/pruritus, which resolved and were consistent with use of adherences.

Conclusion. This was a single-arm, prospective, open-label, pilot study at two sites. SOF/LEDV tablets co-encapsulated with ingestible sensors allowed the DMP to record ingestion adherence rates (number of ingestions detected/number of expected ingestions).Other outcomes were medical interventions, SVR 12 weeks after end of treatment, patient satisfaction, and safety.

Disclosures. A. Ajwad Butt, Gilead: Grant Investigator, Research grant.

2222. Impact of Sustained Virologic Response Achieved Through Newer Direct Acting Antivirals in Hepatitis C Infection on Diabetes Mellitus

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Background. Hepatitis C virus (HCV) infection is one of the leading causes of non-alcoholic liver cirrhosis in the United States with an incidence of about 0.7 cases per 100,000 population and a prevalence of ~2.7 to 3.0 million people. To our knowledge only one study was performed so far to assess the relation between treating hepatitis C virus using direct acting antiviral drugs (DAA) and reduction in the severity of type 2 diabetes mellitus (DM). Our study aims to assess the effect of SVR in hepatitis C virus-on type 2 DM. The effect of the management with newer agents leading to sustained virologic response (SVR) on type 2 DM was analyzed in hepatitis C virus infection.

Methods. We performed a retrospective chart review in our hepatitis clinic located in Shreveport, Louisiana. Patients with age greater than 18 years old, who has both uncontrolled hepatitis C and type 2 DM, seen in our clinic from November 1, 2014 to December 31, 2017 were included. Hospital electronic health records were screened for diagnosis of hepatitis C and uncontrolled type 2 DM by ICD codes. We performed paired sample t-test between pre- and 6-month post-treatment-values of fasting blood sugar and Body Mass Index (BMI).

Results. There was a statistical significant improvement in fasting blood sugar levels following hepatitis C therapy from 184.2 ± 74.8 to 133.0 ± 48.2 (P < 0.01), with an improvement of 1.042 ± 2.03 respectively (N = 49). There was a statistically significant improvement in HbA1c levels following hepatitis C therapy from 8.06 ± 1.8 to 7.019 ± 0.96 (P < 0.05), with an improvement of 1.042 ± 2.03 respectively (N = 21). There was no statistically significant improvement in BMI levels following hepatitis C therapy from 29.91 ± 6.6 to 29.79 ± 6.7 (P > 0.05), with slight improvement of 0.11 ± 0.28 respectively (N = 49).

Conclusion. We conclude that there was statistical significant reduction in fasting blood sugar and hemoglobin A1C levels after achieving sustained virologic response with new direct antiviral treatment for hepatitis C. A pre- and posttreatment change in body mass index was statistically insignificant implying change in blood sugar level was not due to weight loss. There was no change in diabetic medication during the period of the study or there were no dose adjustments occurred.

Disclosures. All authors: No reported disclosures.

2223. Effect of Direct-Acting Antivirals in Hemodialysis Patients with HCV: Real-Life Data

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Figure 2. Proportion of patients treated by each specialty by year of treatment initiation (excludes those classified as “other” and “missing”).