At the Intersection of Drug Use, Motherhood, and Hepatitis C: An Evaluation of Our Present State

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Introduction

- The epidemic of illicit drug use has led to increased incidence of hepatitis C virus (HCV) infection in young adults, which includes women of childbearing age
- Infected pregnant women can vertically transmit HCV to their infants, and exposed infants require close follow-up
- Although many studies comment on the relationship between illicit drug use and HCV, few studies focus specifically on illicit drug use during pregnancy in HCV positive mothers

Objectives

- We sought to quantify and describe rates of illicit drug use during pregnancy in a convenience cohort of infants perinatally exposed to HCV in an area with high rates of HCV and illicit drug use

Methods

- Infants born to HCV positive mothers in the Louisville, Kentucky metro area and surrounding hospitals were followed at a pediatric infectious disease clinic
- Records of exposed infants attending the clinic between February 2012 and July 2018 were analyzed retrospectively
- Cases were identified using V01.79 (ICD9) and Z20.5 (ICD10) billing codes, with maternal information extracted from the infant electronic medical record (EMR) or the maternal record if available
- Demographic and clinical information was collected using a standardized form and transferred to a separate excel sheet
- Descriptive statistics described the data and logistic regression was used to assess associations
- Study was approved by the University of Louisville Institutional Review Board

Results

Table 1: Characteristics of Mothers of Infants Perinatally Exposed to HCV Presenting to a Pediatric Infectious Disease Clinic in Louisville, KY Between February 2012 and July 2018

Maternal Characteristics	
Maternal Age, median (IQR)	28 (IQR 25-31)
Gravidity, median (IQR)	3 (IQR 2-4)
Parity, median (IQR)	2 (IQR 1-3)
Race	
White, % *(n)*	91.0 (101)
Black, % *(n)*	5.4 (6)
Other, % *(n)*	3.6 (4)
Prenatal Care	
Completed, % *(n)*	61.0 (153)
Insufficient, % *(n)*	15.9(40)
None, % *(n)*	23.1 (58)
Birth Hospital	
Urban, % *(n)*	63.8 (277)
Suburban, % *(n)*	24.2 (105)
Rural, % *(n)*	12.0 (52)

Table 2: Active Substance Use and History of Substance Use in Mothers of Infants Perinatally Exposed to HCV Presenting to a Pediatric Infectious Disease Clinic in Louisville, KY Between February 2012 and July 2018

Categories of Reported Substance Use	Percent (*n*)
History of Tobacco Use	83.9 (256)
Tobacco Use During Pregnancy	74.8 (190)
History of Illicit Drug Use	89.0 (380)
Illicit Drug Use During Pregnancy	63.1 (277)
History of IVDU[1]	81.0 (355)
IVDU[1] During Pregnancy	32.0(140)

[1]Intravenous drug use

Figure 1

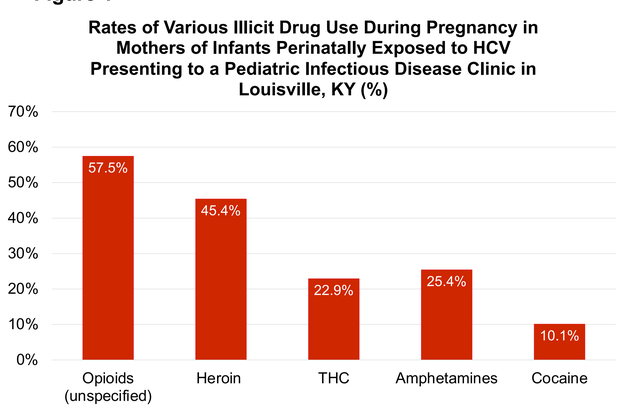
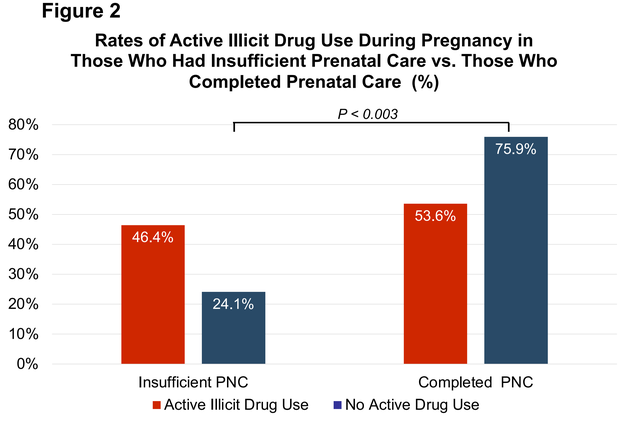


Figure 2



Results Continued

- The majority of women were young (median age, 28) and had more than one child (median parity, 2)
- Most women smoked tobacco (74.8%) and continued to use illicit drugs during pregnancy (63.1%)
- In women who continued to use illicit drugs during pregnancy, the overwhelming majority used opiates (most commonly heroin), amphetamines, THC[1], and cocaine. Other documented drugs used included BZD[2], gabapentin, and SSRIs[3]
- Most women reported a history of intravenous drug use (IVDU), although only one third continued IVDU during pregnancy
- Prenatal care was associated with less maternal illicit drug use during pregnancy (aOR, 0.33; *P*< .003)

[1] Tetrahydrocannabinol; [2] Benzodiazepines; [3] Selective serotonin reuptake inhibitors

Conclusions

- HCV positive pregnant women have high rates of prior and continued illicit and intravenous drug use during pregnancy
- Of the most common illicit and recreational drugs used in this cohort of mothers exposed to HCV, opioids, including heroin, were most commonly reported, with 67.3% of mothers having a history of heroin use and 45.4% reporting active heroin use during pregnancy
- Prenatal care was associated with decreased use of illicit drugs and IVDU in pregnant patients (aOR, 0.33; *P* <.003)
- Pregnancy represents a unique opportunity to link HCV infected women to care, and public health initiatives should be instituted in areas with high prevalence of illicit drug use and HCV
- Interdisciplinary health care teams that include obstetrics, pediatrics, social work, and medical assisted treatment should be developed to provide adequate attention to mothers suffering from drug addiction and their infants

Limitations

- This study was completed in a single institution, therefore the results may not be generalizable to other states or other urban populations
- We followed a comprehensive protocol in which all infants born to HCV positive mothers were evaluated at the pediatric infectious disease clinic at the University of Louisville; however, some maternal records were limited due to birth hospitals in rural areas that lacked robust EMRs

Future Studies

- Public health programs supporting women with HCV and elimination of state restrictions to treat this population can help prevent future exposures
- Additional qualitative studies are needed to further identify needs for this population
- Evaluation using an interdisciplinary team approach to address the many health and social challenges in this population is necessary to improve outcomes