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Risk Factors for Hepatitis C (HCV) Among STD Clinic Clientele: Miami, Florida

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[In the April EPI Monthly Report, we released a preliminary analysis about hepatitis C study in an STD Clinic. Now, we would like to share additional results of this study with you. And, this article appeared in EPI UP-DATE, a weekly publication by the Bureau of Epidemiology, Florida Department of Health (For July 20, 2001)]

Background: Hepatitis C virus (HCV) is the most common blood borne infection in the United States. Injection drug use and history of blood transfusions prior to July 1992 are well-known risk factors for hepatitis C. Several studies have shown that HCV is transmitted through sex and through non-IV drug use. However, the extent to which HCV is spread through these routes is debated. The rate of HCV among the general population is 1.8%. Among persons reporting a history of an STD, the prevalence is 6%. We hypothesized that the prevalence of hepatitis infection among patients at the Miami-Dade County Health Department (MDCHC) STD clinic would be higher than the estimated 6%. Therefore, we undertook a study to assess the prevalence of, and risk factors for HCV among this population. We also sought to determine the sensitivity, specificity and positive predictive value (PPV) of screening criteria in this STD clinic clientele.

Methods: Study participants were recruited from the downtown STD clinic of the MDCHD. Any client 18 years or older who presented to the STD clinic for a new problem, was eligible to participate in the study. If interested in being tested for HCV as part of the study, the participant gave informed consent, received education and counseling on HCV, and was interviewed using the questionnaire. The instrument assessed CDC screening criteria, as well as uncertain risk factors such as tattooing, body piercing, snorting drugs, exchanging sex for money, number of lifetime sex partners and history of an STD.

Results: A total of 710 hepatitis tests were performed as part of the study. The overall acceptance rate was 52%. We were unable to analyze twentyone (3%) of the 710 tests performed due to an insufficient amount of blood. Analysis was performed on 689 completed questionnaires and corresponding laboratory results. The overall prevalence rate of hepatitis infection among our study population

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was 4.6%. In the multivariate analysis, four risk factors were significantly associated with being hepatitis infection, independent of confounding factors. These variables included IV drug use OR=29.1, 95% confidence interval (CI) 7.7-106.5; a history of having spent at least one night in prison/ jail OR=3.7, 95% CI 1.1-12.1; sexual contact with an HCV⁺ person OR=12.4, 95% CI 2.3-66.0, and older age OR=1.4, 95% CI 1.2-1.7 for every 5 years of increased age. The sensitivity of the CDC's routine HCV screening criteria in this population was 69%, specificity 91% and PPV 28%. By adding a history of having spent at least one night in prison/ jail to the CDC's screening criteria, we increased the sensitivity from 69 to 91%, but decreased the specificity to 58%, and the PPV to 18%.

Conclusions: In our STD clinic population we found a prevalence of HCV similar to that found in other studies conducted in STD clinics. Having had a sexual contact with an HCV positive person was independently associated with HCV. We also found that a history of incarceration was independently associated with hepatitis C infection. This relationship should be further studied. CDC's routine screening criteria were not sensitive in this STD population. Based on the study's findings, we will consider including a history of incarceration, and sex with an HCV positive person to the routine screening criteria used in the STD clinic of the MDCHC.



Testing for Arboviral Encephalitis

Lisa Conti, DVM, MPH, Lillian Stark, PhD, Steven Wiersma, MD, MPH

[The following article appeared in EPI UPDATE, a weekly publication by the Bureau of Epidemiology, Florida Department of Health (For July 16, 2001)]

The Florida Department of Health asks physicians and other health-care providers to report cases of viral encephalitis and meningitis during the peak months of the adult mosquito season. Physicians should consider West Nile virus as well as other mosquito-transmitted viruses in the differential diagnosis of viral meningitis, especially in older patients. Children with viral meningitis are more likely to have enteroviral infections, especially in the late summer and early fall. Severe muscle weakness and flaccid paralysis were notable findings during the 1999 New York WNV outbreak. Therefore, physicians should also consider West Nile viral infection in the differential diagnosis of Guillain-Barré syndrome, especially when associated with atypical features such as fever, altered mental status, or a pleocytosis.

To report diseases or for information:

Office of Epidemiology and Disease ControlChildhood lead poisoning prevention program(305) 324-2414HepatitisOther diseases and outbreaksHIV/AIDS ProgramSTD Program(305) 325-3242Tuberculosis Program(305) 324-2470



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(305) 376-1976

(305) 377-6751

Serologic Testing Is Available at Florida Public Health Laboratories

Serologic testing for arboviral causes of encephalitis is available at the Florida Department of Health's Tampa and Jacksonville Laboratories. The panel includes tests for antibodies to West Nile and SLE viruses, as well as dengue. To arrange for testing, physicians should contact their county health department first to report a suspected case.

A completed Florida Department of Health laboratory submission form should accompany all specimens http://www.doh.state.fl.us/lab/labform.pdf (please add the disease onset in the "Additional Tests/Comment" area). Proper collection, storage, labeling, and packaging of specimens is essential to ensure accurate test results. Serum and CSF specimens will be tested for antibodies to West Nile and SLE

NOTE: It is critical to know the onset of disease symptoms to assist with laboratory result interpretation.

Guidelines for Arbovirus testing:

Arboviruses of concern in Florida: St. Louis Encephalitis (SLE), West Nile Encephalitis (WN), Eastern Equine Encephalitis (EEE), Dengue (DEN) and California Group (CAL).

1. Patient less then 1 week post onset of clinical signs:

- Serum: IgM ELISA and IgG HAI If collected at onset and clinical indications are appropriate, may be tested by molecular methods for detection of viral nucleic acids.
- CSF: IgM ELISA, virus isolation, molecular detection of viral nucleic acids

A negative test is not definitive; a positive serology in a single specimen requires confirmation by a convalescent specimen to be valid.

2. Patient 7-14 days post onset of clinical signs:

Serum: IgM ELISA and IgG HAI; SNPR

(serum neutralization assay)

CSF: IgM

A positive serology in a single specimen requires confirmation by a convalescent specimen to be valid. Cross-reactions occur among all the flaviviruses in HAI and IFA assays for IgG and in IgM ELISA assays. The most definitive test is the SN. A single positive serological IgM or IgG must be confirmed by SN.

3. Patient greater than 2 weeks post-onset:

Serum: IgM ELISA and IgG HAI; SNPR (serum neutralization assay)

A positive serology in a single specimen requires confirmation by a convalescent specimen to be valid.

In addition to serum and CSF, submission of an acute stool specimen or an acute throat swab is recommended for virus isolation/detection attempts to test for an enteroviral etiology.

Even though a very early acute serum may be negative it is recommended that it be collected and submitted without waiting for the convalescent specimen. The convalescent should be routinely sent to confirm negative and positive results.

Serologic Testing Is Not Necessary for Asymptomatic Individuals

Many asymptomatic patients who have been bitten by mosquitoes may ask their doctors to test them for West Nile virus, as may patients who have mild symptoms, such as fever and headache. The likelihood of West Nile infection in these patients is low. Physicians can reassure concerned asymptomatic patients and those with mild illness by advising that (1) they are unlikely to be infected with West Nile virus; (2) those with mild symptoms are likely to recover completely, and do not require any specific



Volume 2. Issue 7 July 2001 Page-3 medication; (3) laboratory testing for West Nile virus is not necessary, and (4) they should seek medical attention if they develop more severe symptoms, such as confusion, lethargy, muscle weakness, severe headache, stiff neck, or photophobia. Due to the cross-reactivity between West Nile and other closely related flaviviruses, positive commercial laboratory test results for antibodies to West Nile or other arboviruses should be confirmed by the Florida Department of Health. County health departments can help arrange confirmatory testing for any patient who tests positive for an arboviral infection by a commercial laboratory, regardless of the severity of illness.

Florida's First Human Case of Eastern Equine Encephalitis Confirmed Medical Alert Extended to 17 North Florida Counties

[The following article appeared in EPI UPDATE, a weekly publication by the Bureau of Epidemiology, Florida Department of Health (For July 30, 2001)]

TALLAHASSEE—The Florida Department of Health announced today that the first human Eastern Equine Encephalitis (EEE) virus case has been confirmed in Florida this year. The death from EEE of a nine-year old boy from Okaloosa County has been reported. EEE is an endemic mosquito borne disease, with an average of one to two cases per year in the state.

A previous medical alert issued by health officials for EEE and West Nile (WN) virus has been extended to Okaloosa, Santa Rosa and Walton counties. The alert continues to be in effect for the following north Florida counties: Holmes, Washington, Jackson, Bay, Calhoun, Gulf, Franklin, Liberty, Gadsden, Wakulla, Leon, Jefferson, Madison and Taylor.

The Department of Health urges all Floridians to take precautions against mosquito bites. DOH is recommending the following:

 Avoid outdoor activities between dusk and dawn when mosquitoes are likely to be looking for blood meals;

- If you must be outdoors when mosquitoes are active, cover up by wearing shoes, socks, long pants and long-sleeved shirts;
- Use mosquito repellant; and
- Eliminate stagnant water in birth baths and any other receptacles in which mosquitoes might breed.

For more information on arboviral encephalitis, visit the DOH Bureau of Epidemiology's West Nile website at MyFlorida.com (click on Health and Human Services, then Consumers – Diseases and Conditions, then Arboviral Encephalitis) or http://www. doh.state.fl.us/disease_ctrl/epi/htopics/arbo/index. htm or call the Bureau's hotline at 1-888-880-5782 for recorded information.

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Diseases/Conditions	Reported Cases	2001	2000	1999	1998
	this Month	Year to Date	Year to Date	Year to Date	Year to Date
A IDS *Provisional	102	708	707	786	794
Campylobacteriosis	12	51	48	62	32
Chancroid	0	0	0	0	1
Chlamydia trachomatis	205	1522	2002	2242	942
Ciguatera Poisoning	0	0	0	0	0
Cryptosporidiosis	2	8	1	4	6
Cyclosporosis	0	0	0	0	1
Diphtheria	0	0	0	0	0
E. coli , O157:H7	0	0	1	0	2
<i>E. coli</i> , Other	0	0	0	0	1
Encephalitis	0	0	0	0	0
Giardiasis, Acute	33	128	22	33	30
Gonorrhea	96	836	1562	1561	698
Granuloma Inguinale	0	0	0	0	0
Haemophilus influenzae B (invasive)	0	1	1	0	0
Hepatitis A	10	70	37	37	71
Hepatitis B	3	24	19	16	36
HIV *Provisional	128	804	804	772	840
Lead Poisoning	31	104	207	Not available	Not available
Legionnaire's Disease	0	0	0	0	1
Leptospirosis	0	0	0	0	0
Lyme disease	3	4	3	0	0
Lymphogranuloma Venereum	0	0	0	0	2
Malaria	0	10	15	12	13
Measles	0	0	0	0	0
Meningitis (except aseptic)	6	9	8	15	13
Meningococcal Disease	2	11	12	10	9
Mumps	0	0	1	2	0
Pertussis	0	1	4	8	11
Polio	0	0	0	0	0
Rabies, Animal	0	0	0	0	1
Rubella	0	0	0	0	0
Salmonellosis	29	96	67	115	94
Shigellosis	13	47	59	51	107
Streptococcus pneumoniae, Drug Resistant	32	106	105	89	51
Syphilis, Infectious	20	93	67	35	16
Syphilis, Other	94	421	404	461	303
Tetanus	0	1	0	0	0
Toxoplasmosis	0	6	0	0	0
Tuberculosis *Provisional	28	95	119	126	143
Typhoid Fever	0	0	0	15	2
Vibrio, cholera	0	0	0	0	0
Vibrio, Other	0	0	0	0	1

Monthly Report Selected Reportable Diseases/Conditions in Miami-Dade County, June 2001

* Data on AIDS are provisional at the county level and is subject to edit checks by state and federal agencies. ** Data on Tuberculosis are provisional at the county level. ***: All follow-up cases were removed

