Should changing epidemiology change HAV vaccination policy?

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June 16, 2018
Hepatitis A in the news:

Case of Hepatitis A confirmed at Union Station food kiosk

BY NEWS STAFF
POSTED JUN 12, 2018 4:04 PM EDT LAST UPDATED JUN 13, 2018 AT 5:39 AM EDT

Employee at White Castle in Louisville diagnosed with hepatitis A virus

JUNE 15, 2018 112 Views

Australian woman's death linked to hepatitis from pomegranate seeds

By Mark Lieber, CNN
Updated 12:10 PM ET, Wed June 6, 2018

West Virginia News

Another food worker contracts hepatitis A in West Virginia

Posted Jun 13, 2018 06:20 AM EDT
Updated Jun 13, 2018 06:20 AM EDT

Health

Remember Last Year's Hepatitis A Outbreak? This Year It's So Much Worse.

Cases of the potentially deadly liver disease have nearly doubled as outbreaks spread nationwide.
Most common routes of transmission

- Person-to-person transmission through the fecal-oral route
- Exposure to contaminated food or water
- Sex among men who have sex with men
- Behaviors associated with injection drug use

Hepatitis A reports*, by risk exposure/behavior† — United States, 2015

Source: CDC, National Notifiable Diseases Surveillance System.

Global estimates for Hepatitis A

• Incidence
  » Globally, there are an estimated 1.4 million cases of hepatitis A every year (WHO 2015)

• Prevalence

<table>
<thead>
<tr>
<th>Year</th>
<th>HAV Infections</th>
<th>HAV-related Deaths</th>
<th>Death Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>117 million</td>
<td>30,283</td>
<td>0.026%</td>
</tr>
<tr>
<td>2005</td>
<td>126 million</td>
<td>35,245</td>
<td>0.028%</td>
</tr>
</tbody>
</table>

Prevalence of HAV, 2015

The prevalence of HAV is low in high-income countries

Anti-HAV seroprevalence by age group and world region, 2005

Current vaccination recommendations

WHO Recommendations
- High endemicity countries – vaccination is not recommended
- Intermediate endemicity countries – universal childhood vaccination
- Low endemicity countries – targeted vaccination in high risk groups

US Recommendations
- All children between the ages of 12 and 23 months
- Children between the ages of 2 and 18 years in existing programs (catch-up vaccination can be considered in areas without existing programs)
- International travelers
- Persons who anticipate close contact with an international adoptee
- Men who have sex with men
- Illicit drug users
- Persons with chronic liver disease
- Persons receiving clotting factor concentrates
- Persons who work with HAV-infected primates or with HAV in research settings
- Anyone who wants to obtain immunity

Fiore AE, Wasley A, Bell B, Prevention of Hepatitis A Through Active or Passive Immunization, Recommendations of the Advisory Committee on Immunization Practices (ACIP), MMWR May 19, 2019, 55(R07), 1-23
Hepatitis A vaccination is effective in preventing new infections
Incidence of hepatitis A (cases per 100,000 population) by county in the United States

Fiore AE, Wasley A, Bell B, Prevention of Hepatitis A Through Active or Passive Immunization, Recommendations of the Advisory Committee on Immunization Practices (ACIP), MMWR May 19, 2019, 55(R07), 1-23
Global Immunizations

As of May 2018, 37 countries used a hepatitis A vaccine in routine national immunizations (WHO 2018):

<table>
<thead>
<tr>
<th>Region</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>Argentina, Brazil, Chile, Colombia, Honduras, Mexico, Panama, Paraguay, United States of America, Uruguay</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>Bahrain, Iraq, Kuwait, Qatar, Saudi Arabia, United Arab Emirates</td>
</tr>
<tr>
<td>Europe</td>
<td>Armenia, Cyprus, Finland, France, Greece, Israel, Italy, Kazakhstan, Romania, Russia, San Marino, Serbia, Slovenia, Spain, Switzerland, Turkey</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>Australia, China, Mongolia, New Zealand, Republic of Korea</td>
</tr>
</tbody>
</table>

The incidence of hepatitis A has increased in the US

2015 State Hepatitis A Incidence Compared to Healthy People 2020 National Goal

At or below national goal
Above national goal
More than twice national goal
Data unavailable

Source: CDC, National Notifiable Diseases Surveillance System (NNDSS)
*National goal: 0.3 cases/100,000 population

US CDC, Viral Hepatitis Surveillance report 2015
Changing demographics may require an update to the current vaccination guidelines

- Uneven distribution of wealth
- Large scale immigration
- Globalization of food
- Urbanization/ population density
Conclusions/ recommendations:

• **High endemic countries:** no need change the recommendations – no vaccination

• **Intermediate endemic countries:** continue current recommendations – universal childhood vaccination

• **Low endemic countries:** revisit recommendations as the profile of the risk groups may have changed

US CDC, Viral Hepatitis Surveillance report 2015