ISSUES LEADING TO THE RECENT OUTBREAKS OF HEPATITIS A

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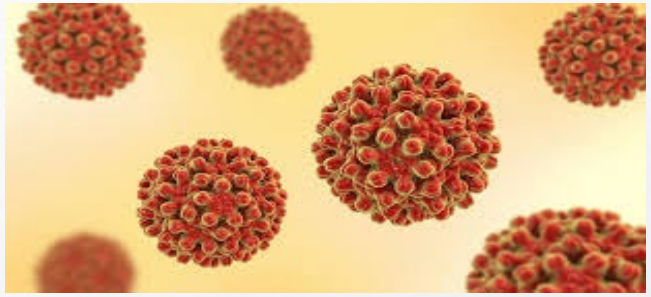
  - NO OUTSIDE FUNDING OR COMMERCIAL SPONSORSHIP WAS INVOLVED FOR THIS PRESENTATION

- LEARNER OBJECTIVES:
  - DISCUSS THE REASONS FOR THE INCREASE IN HEPATITIS A CASES
  - STATE THE COMPLICATIONS RELATED TO HEPATITIS A
  - IDENTIFY THOSE PERSONS NEEDING PRE- OR POST-EXPOSURE IMMUNIZATION AGAINST HEPATITIS A

CLINICAL VIGNETTE

- 49 YO MALE PATIENT WHO IS A MAN WHO HAS SEX WITH MEN (MSM), HAD SEX WITH A NEW PARTNER WHILE VISITING BRAZIL. DURING SEX THE CONDOM BROKE. THE PATIENT RETURNED TO THE U.S. WITHIN DAYS OF THE EVENT AND WENT TO HIS PRIMARY PROVIDER FOR STD TESTING, WHICH INCLUDED HEPATITIS A, B, C. HE WAS CALLED BY HIS PMD AND WAS TOLD HE WAS ANTI-HAV I_GM POSITIVE. HIS PMD'S OFFICE WAS CLOSED AND HE CAME TO THE ER TO DISCUSS TREATMENT OPTIONS. HIS VITAL SIGNS WERE STABLE, AFEBRILE AND HE WAS ASYMPTOMATIC. HE STATES HE HAS NOT BEEN SICK OVER THE LAST FEW MONTHS AND HAS NEVER HAD THE HAV VACCINE.

HEPATITIS A

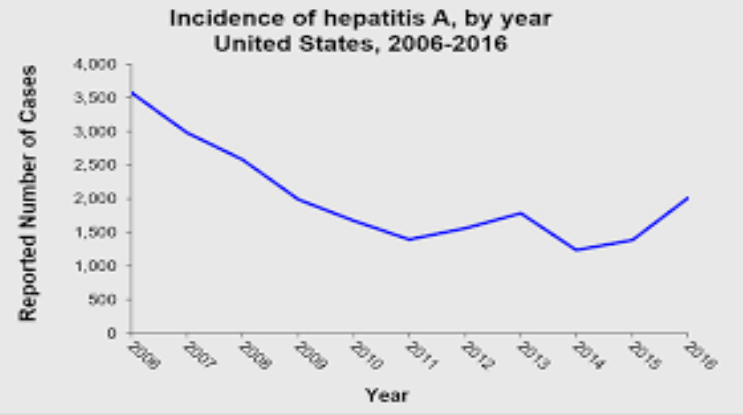


- DEFINITION: A VIRAL ILLNESS THAT IS USUALLY SELF-LIMITING, BUT OCCASIONALLY CAN LEAD TO LIVER FAILURE AND OTHER COMPLICATIONS, ESPECIALLY IN THOSE WHO ARE VERY YOUNG, ELDERLY, FRAIL AND/OR IMMUNOCOMPROMISED.

EPIDEMIOLOGY

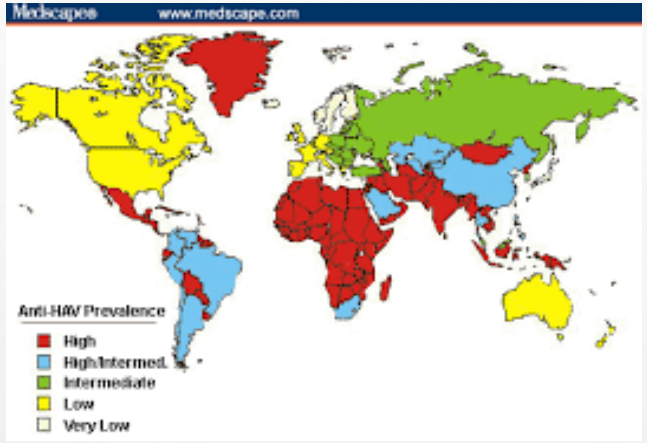
- INCIDENCE OF THIS INFECTION HAD BEEN RAPIDLY DECREASING SINCE THE INTRODUCTION OF THE HEPATITIS A (HAV) VACCINE. FROM 1990-2009, DOWN BY 93.7%, AND HOSPITALIZATION DOWN 68%.
- BY 2016, THERE HAD BEEN FREQUENT REPORTS OF OUTBREAKS OF HAV IN THE US AND WESTERN EUROPE.
- BY APRIL 2018, THE CDC RECEIVED APPROXIMATELY 2500 REPORTED CASES. THE CDC BELIEVES THAT THERE ARE MORE CASES THAT JUST WEREN'T REPORTED!

CENTER FOR DISEASE CONTROL AND PREVENTION (CDC)

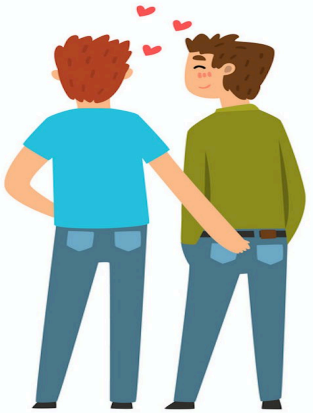


ISSUES RELATED TO RECENT OUTBREAKS!

- LACK OF IMMUNIZATION IN THE CURRENT ADULT POPULATION, OR IN THOSE BORN BEFORE 1996.



- INCREASED TRAVEL TO HEPATITIS A ENDEMIC COUNTRIES LIKE CERTAIN AREAS OF CENTRAL AMERICA, SOUTH AMERICA, THE MIDDLE EAST, AFRICA, ASIA AND THE WESTERN PACIFIC



- HIGH RISK SEXUAL BEHAVIORS, ESPECIALLY AMONG MEN WHO HAVE SEX WITH MEN (MSM)
- JUNE 2017, 1,731 PATIENTS IN 15 EUROPEAN COUNTRIES WERE DIAGNOSED WITH HAV, MOST OF WHICH WERE FROM MSM
- IN 2018, THE CDC ESTIMATED THAT 10% OF NEW HAV CASES IN THE U.S. OCCUR IN MSM, AN INCREASE FROM 4.9% IN 2010

- FROM 2017-2018, SAN DIEGO, CALIFORNIA HAD AN OUTBREAK OF 587 REPORTED CASES OF HAV, 402 HOSPITALIZATIONS, AND 20 DEATHS. THE LARGEST OUTBREAK IN THE U.S. IN TWO DECADES!
- THE MAJORITY OF THOSE WHO CONTRACTED HAV WERE HOMELESS OR HAD A HISTORY OF ILLICIT DRUG USE, AND HAD LIMITED ACCESS TO SANITARY CONDITIONS

TRANSMISSION AND INCUBATION OF HAV

- HAV IS SPREAD PERSON TO PERSON VIA THE FECAL-ORAL ROUTE
- HEPATIC REPLICATION OF THE VIRUS IS DETECTABLE IN THE BLOOD AND EVENTUALLY EXCRETED IN THE FECES BY DAYS 10-12 POST-EXPOSURE
- INCUBATION OF THE VIRUS IN THE HUMAN BODY IS 15-50 DAYS
- THE VIRUS BEGINS TO DECLINE ONCE SYMPTOMS START OCCURRING AND THE PATIENT USUALLY CAN NO LONGER TRANSMIT THE INFECTION BY THE 3RD WEEK

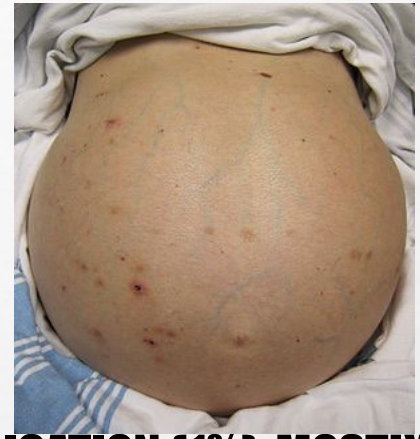
CLINICAL PRESENTATION OF HAV

- JAUNDICE, NAUSEA, VOMITING, FEVER, MALAISE, ANOREXIA, ABDOMINAL PAIN (HEPATOMEGALY), DARK URINE, PALE STOOLS AND PRURITUS
- SERUM SHOWS ELEVATED LIVER FUNCTION TESTS AND ANTI-HAV I_GM POSITIVE RESULTS
- 70% OF ADOLESCENTS AND ADULTS WILL SHOW SOME SIGN OF ILLNESS EX. JAUNDICE
- 70% OF CHILDREN UNDER THE AGE OF 6 YEARS ARE USUALLY ASYMPTOMATIC AND CAN SHED THE VIRUS 10 WEEKS LONGER THAN ADULTS, MAKING THEM A HIGH RISK FOR SPREADING THE INFECTION!
- S/S OF HAV CAN LAST AS LONG AS 2 MONTHS OR LONGER

DIAGNOSIS OF HAV

- SERUM I_GM POSITIVE – *PATIENT CURRENTLY HAS HAV*
  - OCCASIONALLY THE I_GM CAN BE *A FALSE POSITIVE* DUE TO RHEUMATOID FACTORS OR OTHER CROSS REACTING ANTIBODIES.
  - *THE CDC DOES NOT RECOMMEND ANTI-HAV I_GM TESTING AS A SCREENING TOOL FOR HAV IN ASYMPTOMATIC PATIENTS OR THOSE WITH NON-ACUTE LIVER ABNORMALITIES DUE TO THE PROBLEM OF FALSE POSITIVE RESULTS*
- SERUM I_GG POSITIVE - PATIENT HAD THE DISEASE OR THE HAV VACCINE SERIES. ONCE THE PATIENT IS I_GG POSITIVE – *THEY HAVE LIFELONG IMMUNITY TO HAV.*

COMPLICATIONS OF HAV



- ACUTE LIVER INJURY LEADING TO FULMINANT HEPATIC FAILURE – A RARE COMPLICATION (1%), MOSTLY SEEN IN THOSE OVER 50 YEARS OF AGE AND WITH PRE-EXISTING LIVER PROBLEMS. *80% MORTALITY RATE!*
- CHOLESTATIC HEPATITIS LASTS LONGER THAN 3 MONTHS AND CAUSES LFTS, INCREASED BILIRUBIN LEVELS, INCREASED LIPID LEVELS AND INCREASED ALKALINE PHOSPHATASE LEVELS
- RELAPSING HEPATITIS OCCURS 6 MONTHS AFTER THE ONSET OF ACUTE ILLNESS AND PATIENTS MUST BE WATCHED FOR ACUTE LIVER FAILURE
- AUTOIMMUNE HEPATITIS IS A RARE COMPLICATION LEADING TO A PROLONGED ILLNESS THAT SHOWS HYPERGLOBULINEMIA AND CIRCULATING AUTOANTIBODIES

PRE- AND POST-EXPOSURE IMMUNIZATION

- ACTIVE IMMUNIZATION
  - WITH THE HAV VACCINE – 2 DOSES AT 0 AND 6 MONTHS
  - HAV VACCINE IS A KILLED VIRUS, STIMULATING YOUR BODY TO PRODUCE ANTIBODIES
  - PRE-EXPOSURE TO HAV - OFFERED TO CHILDREN BETWEEN 12-23 MONTHS OF AGE
  - CAN BE GIVEN TO ADULTS AT ANY AGE IF THERE ARE NO CONTRAINDICATIONS
  - ESPECIALLY USEFUL TO GIVE TO UNIMMUNIZED MSM, ILLEGAL DRUG USERS, THOSE WITH BLOOD CLOTTING DISORDERS, CHRONIC LIVER DISEASE AND/OR ARE IMMUNOCOMPROMISED
  - POST-EXPOSURE TO HAV – GIVEN TO THOSE (WITHOUT CONTRAINDICATIONS) BETWEEN 1-40 YEARS OF AGE WITHIN 2 WEEKS OF EXPOSURE TO HAV. MAY PREVENT OR ATTENUATE SYMPTOMS – BUT NOT ALWAYS PREVENT THE DISEASE.

- **PASSIVE IMMUNIZATION**
  - **THIS IS WITH IMMUNE GLOBULIN – A PLASMA BASED DIRECT ADMINISTRATION OF HAV ANTIBODIES****
  - **FOR PRE-EXPOSURE PROTECTION AGAINST HAV FOR THOSE TRAVELING TO HAV ENDEMIC COUNTRIES IN THE NEXT 2 WEEKS BECAUSE IT PROVIDES IMMEDIATE PROTECTION – *0.1ML/KG IF TRAVELING FOR 1 MONTH, 0.2ML /KG IF TRAVELING FOR 2 MONTHS. IG MAY ALSO BE REPEATED IF TRAVELING LONGER. YOU MAY ALSO GIVE ONE DOSE OF THE HAV VACCINE AND GIVE THE SECOND ONE WHEN THEY RETURN.***
  - **FOR POST-EXPOSURE TREATMENT – CAN GIVE IG IF IT IS WITHIN 2 WEEKS OF EXPOSURE, ESPECIALLY IN THOSE WHO ARE: PREGNANT, OVER THE AGE OF 40, ARE UNDER THE AGE OF 12 MONTHS, ARE ALLERGIC TO HAV VACCINE, ARE IMMUNOCOMPROMISED OR FOR WHOM THE HAV VACCINE IS CONTRAINDICATED. *DOSE IS 0.1ML/KG***
  - ***IG ONLY PROVIDES TEMPORARY PROTECTION, SO THE PATIENT MAY HAVE TO GET THE HAV VACCINE EVENTUALLY IF NEEDED OR NOT CONTRAINDICATED.***

- **NOTE TO PROVIDERS:
  - DUE TO THE DECREASED PREVALENCE OF PREVIOUS HAV INFECTIONS IN PLASMA DONORS, THE CDC HAS NOW ***INCREASED*** THE DOSAGE OF IMMUNE GLOBULIN (IG) TO PROVIDE ENOUGH HAV I_GG ANTIBODIES FROM 0.02MG/KG TO 0.1MG/KG

POST-EXPOSURE IMMUNIZATION FOR HAV

Table. Post-Exposure IG and HAV Immunization Recommendations for Persons Who Have Not Been Previously Immunized Against HAV

	IG	HAV Vaccine
Under 12 months old	X	
Over 40 years of age and exposed to HAV within the past 14 days[a]	X	
Between the ages of 1 and 40 years		X
Has chronic liver disease[a]	X	
Has chronic medical problems[a]	X	
Is immunocompromised[a]	X	
Is allergic to the HAV vaccine, refused the HAV vaccine, or the HAV vaccine is contraindicated	X	
Pregnant or lactating women[b]	X	

HAV = hepatitis A virus; IG = immune globulin.

[a] IG is recommended but may give HAV vaccine if IG not available.

[b] IG is safe in those women who are pregnant or lactating. The HAV vaccine can be given to pregnant women if they are postexposure to HAV and are deemed to be at a high risk for getting the infection. The HAV vaccine is safe in lactating women.

IMPLICATIONS FOR PRACTICE

- PROVIDERS NEED TO EDUCATE THEIR PATIENTS ON WAYS TO PREVENT HAV
- OFFER PRE- AND POST-EXPOSURE IMMUNIZATIONS
- REPORT INFECTIONS TO PUBLIC HEALTH
- DESIGN A SUPPORTIVE TREATMENT PLAN FOR THE PATIENT
- RECOGNIZE COMPLICATIONS OF ACUTE LIVER FAILURE

CLINICAL VIGNETTE RESOLUTION

- SINCE PATIENT WAS 49 YO MSM WHO WAS EXPOSED AND MOST LIKELY HAD CONTRACTED HAV. HE WAS GIVEN IMMUNE GLOBULIN TO ATTEMPT TO PREVENT AND/OR ATTENUATE SYMPTOMS.
- 2 MONTH FOLLOW-UP PHONE CALL, PATIENT STATED HE REMAINED ASYMPTOMATIC AND FELT GOOD.
- IT WAS RECOMMENDED THAT HE FOLLOW-UP WITH HIS PRIMARY CARE PROVIDER TO SEE IF HE NEEDED THE HAV VACCINE SERIES, ESPECIALLY SINCE HE PARTICIPATES IN HIGH RISK SEXUAL BEHAVIORS. HE STATED HE WOULD MAKE AN APPOINTMENT SOON FOR A COMPLETE PHYSICAL.

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