

Running Head: POPULATION HEALTH, EPIDEMIOLOGY, & STATISTICAL PRINCIPLES

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Introduction

Hepatitis B is a communicable disease that infects the individual's liver and if not treated it can lead to liver failure, scarring of the organ, cancer or can also be fatal. Hepatitis B is spread when people come in contact with open sores, the blood and body fluids of a person that has the Hepatitis B virus. Even though the disease is serious, when one gets it as an adult it may not last (Davis, 2020). The body has its natural way of fighting it off within a few months and one becomes immune from that moment henceforth. This also means that the individual may not be able to get it again, but when one gets it at birth, it is unlikely that it might not go away.

Among the symptoms that one will experience when they are first infected will be light colored poop, the whites of the eyes turn yellow, fever, fatigue which continues for months or weeks and belly pain. In any case, these symptoms may not show up until 1 to 6 months after which the individual is reported to carry the virus (Davis, 2020). The most unique aspect of the condition is that one may not feel anything, but will only discover that they have it through a blood test.

In general aspects, hepatitis B is caused by the hepatitis B virus. People usually get it through various forms that include sex, where one gets it when they have unprotected sex with a person that has it, or through the partner's saliva, blood, semen and vaginal secretions that enter the body. Also through sharing of needles, where the virus is going to easily spread through syringes and needles that are contaminated with infected blood (Davis, 2020). One can also get through accidental needle sticks, which is especially common among nurse and other healthcare workers that come in contact with human blood. Also, hepatitis B can be transmitted from the mother to her child during child birth. However there is a vaccine that can be used to prevent mother to child transmission.

When it comes to diagnosis, the first step is to conduct a physical exam where the individual will be taken through the blood test to see if there is inflammation on the liver or if they have hepatitis B symptoms or there is high level of liver enzymes. Through this, one will be screened for two things; first is Hepatitis B surface antigen and antibody (HBsAg), where antigens on the hepatitis B virus will be screened. These are proteins made by the individual immune cells, they often show up in the person's blood between 1 and 10 weeks after being exposed. When one recovers, they are going to go away after 4 to 6 months, however in the event that they are still there after 6 months, the condition can reported as chronic. Second screening is for Hepatitis B surface antibody (anti-HBs) which show up after HBsAg is disappeared; they are the ones that make the individual get immune to hepatitis B for the rest of their lives (Davis, 2020). However if one becomes chronic of the disease, then the next diagnosis will entail taking a sample from the liver also known as a biopsy to understand the severity and treatment plan.

Basically, treatment of hepatitis B in the United States will depend on the severity of the condition. In most cases, doctors will give the individual a vaccine and a shot of hepatitis B immune globulin. This is a protein that is supposed to boost the individual immune system and enable them fight off the infection. For this with chronic active hepatitis B, there are several medication that will be prescribed. One is Entecavir (Baraclude) which is among the newest drug for Hepatitis B and it comes in form of a tablet or liquid, there is also Tenovir (Viread) that comes as a powder or tablet; it is also important to ensure that it does not harm the kidney. Lamivudine (EpivirA/F, 3tc/HBV. Heptovir) is also another drug which comes as liquid or table, adefovir dipivoxil (Hepsera) which also comes as a tablet though in moderation to avoid kidney problems and Interferon alfa (intron A, Sylatron, Roferon A) that is meant to boost the patient immunity (Davis, 2020). A shot is taken in 6 months, and though does not cure the disease, it is required in treating inflammation. Most of the common

complications that come with hepatitis B include liver cirrhosis, liver failure, liver cancer, blood vessel problem and kidney disease.

Determinants of Health

- *Economic Stability* – Infected persons with insurance are more likely to seek medical help than those who do not have one.
- *Education* - People who are more educated are likely to understand the treatment plan which will in turn positively affect their recovery from the virus. Also when it comes to understanding prescription medicine, they are likely to follow it to the end without assistance than those who are less educated. The issue of poor administration of drugs can also be avoided (Healthypeople, 2020).
- *Social and Community Context* – community stigma can also impact on the issues around adherence and the need to attend to the hospital for treatment. Other religious or cultural practices are also going to affect the adherence to medication and treatment plan (Healthypeople, 2020).
- *Health and Health Care* - with poor healthcare systems it becomes difficult for patient care and treatment to take place.
- *Neighborhood and Built Environment* - people with hepatitis B require community support and a strong social system especially when the condition begins to affect their body functions which may require support in things like taking drugs, and performing other functions (Healthypeople, 2020).

Epidemiological Triad

Hepatitis B is cannot be rated as very common in the United States, and according to the center for disease control about 1.4 million Americans are reported to carry the virus. The number of people that are going to get the disease has continued to go down, as the rates have dropped from an average of 200,000 per year during the 1980s to about 20,000 in 2016. The most likely people to get the virus are individuals of ages 20 and 49. Only about 5% to 10% of children or adults than 5 are said to have hepatitis B will be reported to end up with the infection (Davis, 2020). However the numbers are not good for those younger than 5 (25% to 50%) and are even higher for infants infected at birth (90%) (Davis, 2020).

Role of Nursing Practitioner

When it comes to diagnosis, treatment and management of Hepatitis B, the role of the nursing practitioner is consistent with the APRN consensus model practicing in the population foci of Pediatrics, family, women's health, neonatal, adult geriatrics and psychiatric mental health. It will be important that the nursing practitioner works directly with the patient during the diagnosis and the management of hepatitis B (America Association of Nurses Practitioners, 2020). During this time the nurse's role will be to perform physical examination, order or interpret diagnostic test to the patient, and depend on the level of education provide counselling and write prescription.

References

- American Association of Nurse Practitioners. (2020). *Scope of practice for nurse practitioners*. American Association of Nurse Practitioners.
<https://www.aanp.org/advocacy/advocacy-resource/position-statements/scope-of-practice-for-nurse-practitioners>
- Davis, K. (2020). *Hepatitis B: Causes, symptoms, and treatment*.
<https://www.medicalnewstoday.com/articles/306288>
- HealthyPeople. (2020). *Social determinants of health | Healthy people 2020*. Healthy People 2020 |.
<https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>