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## RESEARCH ARTICLE

### PREVALENCE OF HEPATITIS B AND HEPATITIS C AT PHI CLINICAL HOSPITAL BITOLA IN 2018

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#### ABSTRACT

**Introduction:** Hepatitis B infection is a common cause of chronic liver disease. The World Health Organization estimates that 257 million people are living with hepatitis B. In 2015, over 800,000 deaths worldwide were attributed to complications of hepatitis B infection. Hepatitis C virus is a globally prevalent pathogen and a leading cause of death and morbidity, is a major cause of cirrhosis and hepatocellular carcinoma. The most recent estimates of disease burden show an increase in seroprevalence over the last 15 years to 2.8%, equating to >185 million infections worldwide. **Materials and Methods:** This study was carried at the Department of medical biochemistry in Public Health Organization Clinical hospital d-r Trifun Panovski in Bitola. The serum was separated and HCV and HBs Ag were measured using Abbot Architect CI 4100 analyzer. **Results:** A total of 661 patients were examined. The mean age of the cohort was 41 years old, ranging from 0 to 90 years old. Analysis of the results showed that 129 patients were reactive of the virus: 43 patients are HBsAg reactive (22 males and 21 females), 81 patients are anti-HCV reactive (65 males and 16 females), 4 patients are HBsAg + anti-HCV reactive (male). **Discussion:** In our country the rate of HCV and HBV cases is constantly increasing. This is evidenced by data from our research showing a 1% increase in cases compared to 2016. Seriously worrying is the fact that in 2018 there are 30 more patients, newly infected with hepatitis C virus. Hepatitis B virus has been proven to have several subtypes, but unfortunately it has not yet been detected in our country. **Conclusion:** Hepatitis B and C infections are a serious health and social problem. They affect the quality of life of the whole family, not just the person who carries the disease. It is necessary to educate the population at an early age on how to transmit and direct young people to healthy lifestyles, sports and contraceptive use.

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#### INTRODUCTION

Hepatitis B infection is a common cause of chronic liver disease. The World Health Organization (WHO) estimates that 257 million people are living with hepatitis B. In 2015, over 800,000 deaths worldwide were attributed to complications of hepatitis B infection; the majority of which were related to complications of chronic infection such as the development of cirrhosis and hepatocellular carcinoma (HCC) (Hepatitis, 2018). Hepatitis B virus (HBV) infection has shown an intermediate or high endemicity level in low-income countries over the last five decades. In recent years, however, the incidence of acute hepatitis B and the prevalence of hepatitis B surface antigen chronic carriers have decreased in several countries because of the HBV

universal vaccination programs started in the nineties. It is not an example for our country, because no vaccine has been introduced in our country yet. The progression of liver disease to the more severe forms and the development and complications of hepatocellular carcinoma (HCC) entail a heavy burden for low-income countries. The available data from eastern European countries show higher HBsAg-positive prevalences than in western Europe (Lazarevic, 2007). Hepatitis C virus (HCV) is a globally prevalent pathogen and a leading cause of death and morbidity, is a major cause of cirrhosis and hepatocellular carcinoma (HCC). The most recent estimates of disease burden show an increase in seroprevalence over the last 15 years to 2.8%, equating to >185 million infections worldwide (Mohd Hanafiah, 2013). Persistent HCV infection is associated with the development of liver cirrhosis, hepatocellular cancer, liver failure, and death (Lauer, 2001).

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Globally, in 2015, it was estimated that the Eastern Mediterranean Region had the highest prevalence of HCV RNA (2.3%) followed by the European Region (1.5%) (World Health Organization, 2018). Egypt has the highest estimated prevalence—30,000 per 100,000 persons (30%)—likely because of injection procedures associated with eradication of schistosomiasis. Prevalence is also high in India, Pakistan, China, and Indonesia but markedly lower in Japan, Northern and Western Europe, North America, and Australia (Hepatitis, 1999). HCV and HBV infection might have increased in Macedonia in recent years. HBV and HCV share a common transmission pathway through large or recurrent direct percutaneous blood exposures (eg, transfusion or infectious donor transplantation, injection drug use) or mucosal exposure to blood or serum fluids (e.g. birth of an infected mother, sex with an infected partner). Transmission with reckless percutaneous exposure is caused by cross contamination from reused needles and syringes.

## MATERIALS AND METHODS

This study was carried at the Department of medical biochemistry in Public Health Organization Clinical hospital d-r Trifun Panovski in Bitola. Written informed consent was taken from all the subjects before undergoing any investigation. The research protocol was conducted in accordance with the Helsinki Declaration. The blood samples were taken after overnight fast (12 hours). The serum was separated and HCV and HBs Ag were measured using Abbot Architect CI 4100 analyzer.

## RESULTS

A total of 661 patients were examined. The mean age of the cohort was 41 years old, ranging from 0 to 90 years old. Analysis of the results showed that 129 patients were reactive of the virus: 43 patients are HBsAg reactive (22 males and 21 females), 81 patients are anti-HCV reactive (65 males and 16 females), 4 patients are HBsAg + anti-HCV reactive (male), 80% of the respondents were inactive and 20% were reactive to HBsAg and anti HCV. 63% of reactive patients are anti-HCV reactive, 33% are HBsAg reactive, 3% are anti-HCV + HBsAg reactive. 71% of reactive patients are males, 29% are females. We compared this results with results from 2016 year. In 2016 y. we have 524 examined patients, 427 non-reactive and 97 reactive. HCV reactive were 56 patients (48 males, 8 females) and HBsAg reactive were 43 patients (15 males and 28 females). In 2018 year we found that 20 % are reactive, compare to 2016 y. when we found 19% reactive patients with HBsAg and anti-HCV. That means that rate of diseases increases year by year. HBsAg reactive were 47 patients in 2018, and 43 patients in 2016 year. About Anti-HCV reactive patients we can conclude that we have 85 patients in 2018 year, and 56 in 2016 year. That means that rate of anti-HCV reactive patients increase with 30 patients. This is a worrying fact as this is due to the increasing number of intravenous drug addicts who are our most frequent patients.

## DISCUSSION

In our country the rate of HCV and HBV cases is constantly increasing. This is evidenced by data from our research showing a 1% increase in cases compared to 2016. Seriously worrying is the fact that in 2018 there are 30 more patients,

newly infected with hepatitis C virus. Hepatitis B virus has been proven to have several subtypes, but unfortunately it has not yet been detected in our country. HBV genotypes A and D are those most frequently detected in eastern Europe, genotype D being responsible for 70%-80% of the HBV infections occurring in the northern and central areas and in eastern Mediterranean countries. In fact, HBV genotype D predominates in Romania (67%), Lithuania (54%), Serbia (82%), Croatia (80%), Albania (92%) and Russia (93%), whereas genotype A predominates in Poland (77%) and in the Czech Republic (67%), two countries with similar ethnic backgrounds and a small proportion of immigrants (3%-4%) (Zampino, 2015). Increased number of newly infected patients in the Republic of Macedonia is due to the still unregistered hepatitis B vaccine, which is not the practice in developed countries, where the number of newly infected is in a rapid decline. In recent study from Bulgaria, the HBsAg-positive prevalence in individuals aged 19 or less, targeted by HBV vaccination, was significantly lower than that found in non-vaccinated individuals aged over 20 (1% vs 4.8%) (Kevorkyan et al., 2010).

## Conclusion

Hepatitis B and C infections are a serious health and social problem. They affect the quality of life of the whole family, not just the person who carries the disease. It is necessary to educate the population at an early age on how to transmit and direct young people to healthy lifestyles, sports and contraceptive use. The larger challenges for the goal of global HCV eradication include increasing screening and diagnosis, education of treating providers, and the assurance that these highly effective treatments are accessible. Efforts to reduce the incidence of acute infection among drug users and through iatrogenic contamination are essential.

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