

# Alarming Levels of Hepatitis C Virus Prevalence among Rohingya Refugees in Bangladesh: Emergency National and International Actions Warranted

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The southeast Asian nation of Myanmar includes Rakhine State (known as Arakan State before 1989). The Rohingya people of Myanmar residing at Rakhine state were stripped of citizenship in 1982, as it was told that they could not meet the requirement of proving their forefathers settled in Burma before 1823, and now account for one in seven of the global population of stateless people.<sup>1</sup> In June 2012, violence between Rohingya and Rakhine residents of Rakhine State broke out. Subsequently, spiraling violence's followed, and the Myanmar government sent the military to affirm peace. However, these authorities have also been reported to join the Rakhine in the looting and killing of Rohingya. These facts resulted in forceful migration of about one million Rohingya people to Bangladesh in 2017.<sup>1</sup>

Bangladesh is a country of 160 million people and belongs to one of the developing countries with multiple constraints and limitations regarding healthcare delivery system. Thus, the health impact of about one million Rohingya refugees within a short period is enormous; especially the incidents and prevalence of communicable diseases may turn to epidemic parameters.<sup>2</sup> In emergency and crisis settings, water and sanitation, food and nutrition, shelter and nonfood items, access to health services, and information are five crucial domains required for immediate management of suffering refugees. However, chronic infections and chronic diseases take its toll for a prolonged period and even paralyze the entire survival system of the refugees as well as their shelter providers.

Bangladesh is endemic for hepatitis B virus (HBV) and hepatitis C virus (HCV), and these viruses cause chronic liver diseases such as cirrhosis of liver and liver cancer. In a situation like the Rohingya refugee crisis, most of the national and international attention is diverted to shelter, food, and control of acute infections and epidemics.<sup>3,4</sup> Finally, everyone remains busy to ensure a safe return of these refugees to their native country. Thus, almost nothing is done for control and containment of chronic infections; however, the long-term effects of these diseases are immense, and these may shatter all sorts of positive approaches of refugee handling. These facts and realities led us to undertake a pilot study to assess the prevalence of hepatitis viruses in one of the Rohingya refugee camp at Cox's Bazar district of Bangladesh. The name of the refugee camp is Lambasia camp, and it is situated under control of Ukha police station at Cox's Bazar district. There has been a total of 267 refugees at the camp and sera were collected from 75 subjects. All sorts of permissions were taken from the camp authority, Government of Bangladesh, and local health authorities. The sera were centrifuged

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after bringing them at Cox's Bazar District Hospital. We checked hepatitis B surface antigen (HBsAg), anti-hepatitis C virus (HCV), both markers of HBV and HCV, respectively. Finally, all sera were subjected to a polymerase chain reaction (PCR) using HBV and HCV-specific primers in reference laboratories to assess HBV DNA and HCV RNA. Although 75 samples were collected, the proper quality of nucleic acids could be isolated from 53 samples. HBV DNA was detected in 2 of 53 subjects providing HBV DNA positivity of 3.77%. On the other HCV RNA was found in 7 of 53 samples with the rate of positivity of 13.2%.

The retrieved data exposed an area of immediate national and international attention. This is a pilot study and was initiated to assess the prevalence of hepatitis of chronic viral infections among Rohingya refugees. The positivity of HBV among the apparently healthy population is most similar to those of Bangladeshi people. However, the prevalence of HCV seems to be several folds (about 10 folds) compared to same of Bangladeshi people.<sup>5</sup>

The Rohingya population represents a tortured and a humiliated population who were economically comprised for decades or even centuries.<sup>6</sup> Also, the average education levels of these population are not satisfactory. During their voyage to Bangladesh, they have traveled miles after miles with fear of torture and prosecution. The high prevalence of HCV infection in these population indicate the vulnerability of these population to severe forms of liver diseases in the near future. The prevalence of HCV among the Bangladeshi population is less than 1%; however, this has been found to be about 10 times among Rohingya refugees in the study population. It is still elusive as this pilot study is representative of the Rohingya population or not. Immediately, a large cohort of Rohingya population should be studied to find the real prevalence of HCV, or at least, the study should be expanded to more camps of Rohingya refugees so that more insights are developed about their infective state. In fact, any epidemiological study among the Rohingya population is a hard task considering their attitude towards check-up, confidence levels to the establishments, language limitation, and overall disbelief due to a prolonged anomaly in their lifestyles.

The problem that we have unmasked is not only an emergency problem of Rohingya population, and it may also shatter the health care delivery system of Bangladesh as well. Close contact is now prevailing between Rohingyas and Bangladeshi people, including mutual marriages and social integrations. Utmost precautions must be taken to address how to prevent dissemination of HCV to Bangladeshis. Bangladesh is a signatory of 'Hepatitis Elimination by 2030'; however, the entire program may be jeopardized due to the influx of a population with such high prevalence of HCV.

To our knowledge, the Rohingya population is a self-limited, self-designed, and self-flourished population group. It is surprising as to how such a huge population of Rohingya has been infected by HCV, a deadly virus causing cirrhosis and cancer in most cases. There is an urgent need to assess HCV genotype as well as accomplishing full genome sequencing to find out the routes of infection. A study is now progressing to get a response to these queries.

In conclusion, the present pilot study may have unmasked the tip of an iceberg in a highly venerable population about HCV infection. Immediate public health approaches and large-scale studies are warranted to cope with this disastrous situation of a refugee population when everyone is busy with the control and containment of acute infections.

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