

# INTERFERON-FREE THERAPY FOR HEPATITIS C IN PAKISTAN

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## ABSTRACT

Hepatitis C virus (HCV) infection is a global health problem. In Pakistan, more than 10 million people are suffering from HCV infection with an estimated prevalence of 4.9%. Hepatitis C virus is classified into six genotypes. Various genotypes respond differently to different treatment regimes. In Pakistan, 79% cases of HCV infections have genotype 3. The aim of therapy in chronic HCV infection is to attain sustained virologic response and thus reduce liver fibrosis and hepatoma. Although Interferon plus ribavirin therapy shows a good response in patients with genotype 3, yet the problem with this regimen is the serious side-effects of interferon. For these reasons interferon-free therapy was always a desire. Directly acting agents like sofosbuvir has made the dream of interferon-free therapy a reality. Studies have shown an excellent response to combination of sofosbuvir and ribavirin therapy in genotype 3 which is the most prevalent type in Pakistani population.

**KEY WORDS:** Chronic hepatitis C; Sofosbuvir; Interferon; Pakistan.

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## INTRODUCTION

Hepatitis C virus (HCV) infection is a global health problem. It affects more than 200 million people worldwide. In Pakistan more than 10 million people are suffering from HCV infection with an estimated prevalence of 4.9%.<sup>1-4</sup> Chronic HCV infection causes cirrhosis, liver failure and hepatocellular carcinoma and it is the most common indication for liver transplantation.<sup>5</sup>

Hepatitis C virus is a single stranded RNA virus of Flaviviridae family.<sup>6</sup> It is classified into six genotypes on the basis of nucleotide sequence. Various genotypes respond differently to the treatment regimes.<sup>3, 7-9</sup> HCV genotypes 1-3 are commonly found and their prevalence varies in different parts of the world.<sup>2</sup> In Pakistan, 79% cases of HCV infection have genotype 3 while the remaining cases are mostly of genotype 1.<sup>10-12</sup>

The target of therapy in chronic HCV infection

is to attain sustained virologic response (SVR). This reduces the liver fibrosis and chances of development of hepatoma.<sup>5, 11</sup>

Interferon (INF) plus ribavirin (RIV) therapy shows a reasonable response in patients with genotype 3, which is the most prevalent type in Pakistan. However, the problem with this regimen is the serious side effects due to interferon. Moreover, INF is injectable with least preference and acceptance of the patients. For these reasons interferon-free therapy was always a desire.<sup>12</sup> Directly acting agents (DAAs) like sofosbuvir (SOF) has made the dream of interferon-free therapy a reality.<sup>5, 13-15</sup> Studies have shown an excellent response to combination of SOF and RIV therapy in the Pakistani population.<sup>10, 16, 17</sup> The problem with this therapy is the high cost of these agents especially in developing countries where the disease is most prevalent.

## DISCUSSION

Hepatitis C infection is common in Pakistan mainly because of unsafe blood transfusions, surgical procedures, dental procedures, untrained clinicians, reuse of syringes, barbers, and ear and nose piercing tools.<sup>18</sup> Hepatitis C in Pakistan is most of the times identified incidentally or because of cirrhosis and its complications.<sup>3-5, 10</sup> Inadequate healthcare facilities, illiteracy, and high cost of treatment are barriers to eliminate HCV infection from Pakistan.<sup>3</sup>

Determination of genotype assists in the

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selection of regime and duration of therapy for chronic HCV infection.<sup>3</sup> The predominant genotype in Pakistan is genotype 3 and DAAs have shown excellent results in attaining the SVR in these patients. A study of 502 patients by Akhter et al<sup>16</sup> revealed that SOF was effective in treating genotype 3 HCV patients, irrespective of their previous treatment status, age or serological status. In this study SVR was attained in 84.6% of patients. Similar favorable results have been shown in studies from Europe as well. Oral sofosbuvir–ribavirin regimen resulted in high rates of SVR both in patients with HCV genotype 2 and 3 infections.<sup>19,20</sup>

World Health Organisation (WHO) has given the target to diagnose 90% and to treat 80% patients with HCV infection by the year 2030.<sup>21</sup> Until recently, this goal looked hard to achieve but the introduction of DAAs in the therapy has revolutionized the situation. The high price of these drugs was really a problem in the low and middle income countries like Pakistan, but this problem is solved by generic drugs which are providing a cheap alternative. Now-a-days SOF plus RIV is used alone for genotype 3 for 24 weeks and along with pegylated interferon (Peg-INF) for genotype 1 for 12 weeks.<sup>22-27</sup> Research is now open to test various regimes with different ADAs.<sup>28</sup>

## CONCLUSION

In Pakistan, HCV infection is common and most of the cases have genotype 3. Although Interferon plus ribavirin therapy shows a good response in patients with genotype 3, yet the problem with this regimen is the serious side-effects of interferon. Directly acting agents like sofosbuvir has made the dream of interferon-free therapy a reality and has given the hope for its eradication.

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**CONFLICT OF INTEREST**  
Authors declare no conflict of interest.

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