Description of Pharmacogenetics for Patients with Hepatitis C Virus in the Kingdom of Saudi Arabia: A Single Center Perspective

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Background

Over 71 million people are living with hepatitis C virus (HCV) globally. HCV is an RNA virus that can be classified into different types of genotypes and can lead to multiple complications, including liver cirrhosis, hepatocellular carcinoma, and death. HCV treatments are effective but highly dependent on the HCV genotype and subtype.

There are few studies describing the HCV genotype in the Middle East, in particular, Saudi Arabia.

Objective

This study aims to describe the genotypes of patients with HCV living in Saudi Arabia and their associated treatments.

Methods

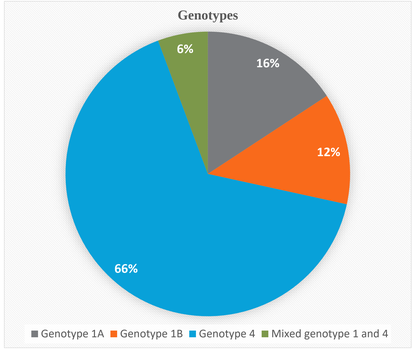
The study was conducted at National Guard Hospital in Riyadh. All adults (18 years and older) diagnosed with HCV who started direct-acting antiviral agents were identified from the pharmacy records. The relevant clinical factors, including patients' characteristics, comorbid conditions, treatments, and HCV genotypes, were collected.

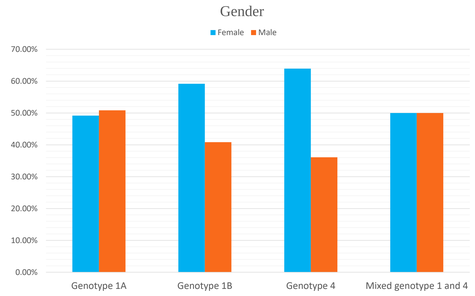
The baseline viral counts were collected and converted into log algorithm values. The sample size was determined using G*Power analysis software, while all analyses were conducted using R: A language and environment for statistical computing.

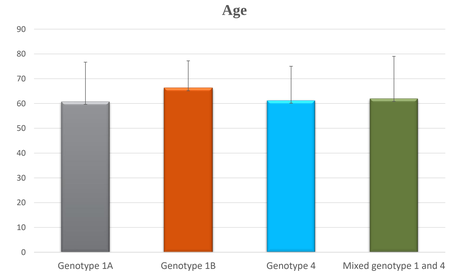
Results

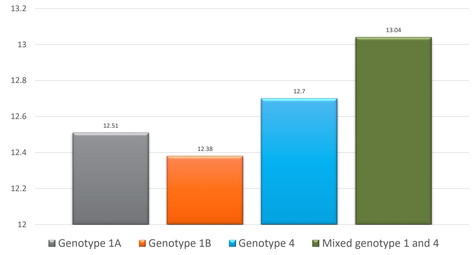
A total of 387 patients with HCV were identified, out of which 28.42% were genotype 1, 65.8% were genotype 4, and 5.78% had mixed genotype 1 and 4.

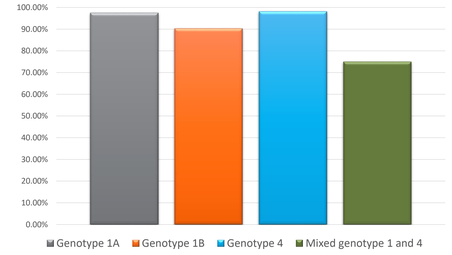
The majority of those patients were elderly (M = 61.4 SD = 0.8). The majority of patients received sofosbuvir (294 patients), ledipasvir (200 patients), ribavirin (190 patients), and paritaprevir (93 patients).











Total patients 387 identified with HCV				
Treatments	Genotype 1A	Genotype 1B	Genotype 4	Mixed genotype 1 and 4
Sofosbuvir	68.85%	65.31%	78.43%	90.91%
Paritaprevir	31.15%	34.69%	21.57%	9.09%
Ribavirin	72.13%	59.18%	74.12%	81.82%
Simeprevir	6.56%	8.16%	10.59%	18.18%
Dasabuvir	27.87%	34.69%	0.78%	4.55%
Ledipasvir	55.74%	48.98%	55.29%	59.09%
Daclatsvir	4.92%	8.16%	9.02%	13.64%

Conclusion

It was shown that HCV genotype 4 was predominant in Saudi Arabia, unlike findings in the United States and Northern Europe, where genotype 1 predominates. Future studies are needed to evaluate the effectiveness of direct-acting antiviral agents with their targeted genotypes.

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