

**Objectives:** To detect the hepatitis C virus infection and genotypes among blood donors by Polymerase Chain Reaction and biochemical measurement of Alanine Transaminase, Aspartate Transaminase & Alkaline phosphatase enzymes' levels and measurement of viral load among the studied sample.

**Methods:** A descriptive Cross sectional study done on 45 hepatitis C virus sero-positive blood donors (20-53 years old). A non probability (convenient) sample of blood donors at their first donation of blood, who accepted to participate in the study were included, interviewed and blood samples were taken.

**Results:** The seroprevalence of anti-Hepatitis C virus antibody was 0.29%, whereas prevalence of Hepatitis C Virus-Ribo-Nucleic Acid-positivity after confirmation by Polymerase Chain Reaction was 0.2%. 46.7% of the blood donors were infected with genotype 4 followed by genotype 1b in 15.6% and genotype 1a in 6.6. The presence of Hepatitis C virus infection significantly associated with biochemical parameters in the three groups of genotypes, except in the levels of alkaline phosphatase. Statistically significant association was found between age infections.

**Conclusions:** The prevalence of anti-Hepatitis C Virus- antibodies was relatively low in blood bank of Babylon province in Iraq compared to other with province in Iraq and other neighboring countries more among males than female and rural than urban area. The most common genotype was genotype 4, followed by 1b then 1a. The main factor associated with transmission of infection was blood transfusion in association with surgical procedures.