

Immune Response 2019: Epidemiology, molecular genotyping and risk factors of HAV infections in the West Bank, Palestine- Rasmi Abu-Helu - Al-Quds University

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Abstract:

Background:

Hepatitis A virus (HAV) is a food and water-borne virus causing clinical (mainly hepatitis) and subclinical disease in human. diagnosis and genotyping of HAV infection is helpful for proper treatment and epidemiology surveillance. The aim of the present study was to determine the molecular genotyping and the risk factors of HAV infection in the West Bank, Palestine using serology and Molecular essay. Recurrent Miscarriage (RM) is defined as two or more consecutive pregnancy losses before 20th week of gestation, it is one of the most common pregnancy complications, affecting up to 2–4% of women of reproductive age. Several contributing factors have been identified in the risk of recurrent miscarriages, such as genetic defects, the immune system, endocrine and anatomical systems. The etiology in approximately 50% of cases of RM is unknown, but it has been assumed that a proportion of these recurrent pregnancy losses may be due to immunological reasons. After encountering the antigen, T helper (Th) precursors differentiate into functionally Th1 and Th2 cells, with unique patterns of cytokine production. Cytokine production levels are partly under genetic control, and their gene expression can be changed by nucleotide variation. The expression of pro-inflammatory cytokines in the uterus such as IL-17, TNF- and IL-6 has been associated with fetal loss. Anti-inflammatory cytokines such as IL-10 appear to protect against inflammation-induced miscarriage. It protect against abortion caused by inflammation.

The rising pervasiveness of a few diseases and the rise of a few new illnesses are relied upon to empower the main players in the market for the advancement of novel and successful antibodies and medications. This is anticipated to upgrade the development of the worldwide vaccinations showcase in the following couple of years.

Objective: To investigate the association of RM with polymorphisms of an anti-inflammatory IL-10 (-592 A/C, -819 C/T), and two pro-inflammatory IL-17A, IL-17F and IL-6 (174 C/G) cytokine genes in RM compared to normal Palestinian women in the West Bank. To investigate the association of RM with polymorphisms of an anti-inflammatory IL-10 (-592 A/C, -819 C/T), and two pro-inflammatory IL-17A, IL-17F and IL-6 (174 C/G) cytokine genes in RM compared to normal Palestinian women in the West Bank. Vaccines Conferences advisory board invites all the participants across the world to attend “International Conference on Vaccine and Immune Response” going to be held during November 14-15, 2019 in Istanbul, Turkey. The Theme of the conference is "Next Generation Vaccine; Research, Development and Challenges" will explore the advances in Vaccines and Immune Response. This conference could be an unique event that brings along a International and novel mixture of huge and medium cognizance on vaccines and immune response, leading universities engendering the conference an ideal platform to apportion expertise, foster

collaborations across trade and globe, and assess elevating technologies across the world.

Vaccination is a key to abolish the diseases. It is the subject for the researchers, scientists, professionals who looks beyond the clinical prospects. Traditional approaches to vaccine design were to inactivate the human pathogen or an equivalent animal homologue, Vaccinology can define as, the science of vaccine research, development and how the immune system responds to vaccines, as well as includes continuous evaluation of immunization programs and vaccine safety and efficacy, and observation epidemiology of vaccine-preventable diseases. This chapter provides a brief overview of some of the main concepts of Vaccinology and immunology as they relate to vaccination. Vaccine and Immune Response 2019 amasses all the extroverts under one roof of current advances.

It is aimed to give an opportunity that with scholars from around the globe focused on learning about Vaccines & Immunology and its advances, Development and Challenges; this is the best opportunity to reach the largest assemblage of contributors from the Vaccines & Immunology community. Lead overviews, circulate data, meet with existing and potential researchers, make a sprinkle with new vaccinations and immunizations improvements, and get name acknowledgement at this occasion.

Method:

In this study, 272 HAV suspected cases were analyzed by ELISA for the presence of antibodies to HAV. RNA was extracted from 110 HAV IgM positive human sera. Samples found positive by RT-PCR using primers targeting the VP1/VP2A

junction and VP1/VP3 capsid region of HAV, were subjected to sequencing and phylogenetic analyses. This study included 107 women from different areas of the West Bank, 55 women with recurrent miscarriages without a specific cause, and 52 women who do not have any pregnancy-related risks. All samples were analyzed by polymerase chain reaction (PCR) targeting IL-10, IL-6, and IL-17 gene polymorphisms followed by RFLP, using specific restriction enzymes for each gene site 5 .

Results

IgM type antibodies to HAV were detected in 272 patients ;136 sample as the control group were negative for HAV IgM, and 136 cases was positive for IgM, 75.74% of them were students differed in age groups and was higher in the age group ≤ 10 years. Phylogenetic Analysis showed that the majority of HAV strains detected in this study belong to the "HAV 1B" cluster. This study has proven a significant association of polymorphism in the IL10-819 C/T, and increased frequency of recurrent miscarriage among Palestinian women ($p=0,0009$), and the lack of association between polymorphisms in IL10-592C / A, IL6-174G / C, IL-17, and recurrent miscarriage in the studied group.

Conclusions

The results indicate that molecular studies determining the HAV genotype variation in Palestine is timely and warranted. The majority of IgM positive cases in ≤ 10 year-old Patients. Sub-genotype IB is the most prevalent genotype in Palestine. There is not only one genetic factor, but also possibly several that are involved in the abortion disease etiology. There are about 50% are idiopathic factors. If the relationship between genetic factors and immune system disorders is explained, genetic polymorphisms as the one that is studied may represent markers for choice of

therapeutic options and for counseling patients with repeated spontaneous abortions. This study is the first in the West Bank that examines the relationship between IL-10, IL-6, and IL-17 gene polymorphisms and spontaneous abortion, and may be considered as supportive of previous studies in the same field. However, the true mechanism of this relationship remains unknown and requires more investigation.