

10th International Congress on

CLINICAL VIROLOGY, FUNGAL INFECTIONS & INFECTIOUS DISEASES

December 04-05, 2017 Dubai, UAE

Investigation of the correlation between congenital hypothyroidism and human *Cytomegalovirus* among newborn in Taif Governorate, Saudi Arabia

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Background & Aim: Congenital Hypothyroidism (CH) is the most common condition of thyroid hormone deficiency at birth in rate of 1:2000 to 1:4000 causing primarily intellectual disability. *Cytomegalovirus* (CMV) on the other hand, is the lead to infectious cause of mental retardation and hearing loss in newborn. CMV is highly transmitted transplacentally and occurs in 1 of 150 infants. About 80% of affected infants are asymptomatic, while 10-20% of them are subjected to serious problems later. CH and CMV are preventable and complications can be avoided if caught early. As both disease is affecting the newborn infants and has alike serious sign and symptoms, this study is designed to investigate for the first time, the possible correlation between CH and CMV among newborns in Taif Governorate.

Methods: A total of 3432 blood samples were collected during neonatal program for early discovery of thyroid disease in Taif Governorate during April 2015 till November 2015. Samples were screened and classified into two main groups according to the TSH antibodies level, studied group and control. Each group was sub-grouped according to CMV antibodies results to -CMV and +CMV. All groups were examined for both types of antibodies IgG and IgM. Serological techniques as quantitative-ELISA and chemiluminescent were applied for detecting the antibodies. Statistical analysis was performed to know whether the different outcome has significance or not.

Results: ELISA test showed different variation between the groups. A significant increase in TSH level in the study group than the control with a value of $P=0.0001$. No significant difference between levels of CMV IgG positive in study group and control neither between CMV IgG negative control and study group. Same was shown between CMV IgM negative control and study groups and CMV IgM positive control and study groups.

Conclusion: This study found no significant correlation between CH and CMV infection in newborn. The study has markedly ruled out the CMV infection as a potential secondary cause of the CH, lightening a dark area of clinical infectious mysteries.

Biography

Nora Alsharif has received her Bachelor's degree in Biotechnology and Master's degree in Microbiology specialized in Virology. Her research interests involve viruses and the global burden of infectious diseases. She has also attended several courses and seminars for practical experience in some major hospitals and education institutions labs, beside few certified self-developing courses. Presently, she is an Intern in one-year program of biomedical laboratories in an accredited lab by CAP in Taif city participating in some clinical researches.

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