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Comparison between chemiluminescent and some different methods for detection of human *Cytomegalovirus* antibodies in neonates in Taif Governorate, Saudi Arabia

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Introduction: HCMV is the most common pathogen of intrauterine infections, affecting an estimated 1-2% of all live births. However, the incidence of it among different populations is quite variable. Maternal primary HCMV infection occurs in approximately 0.7% to 4%. Subsequent vertical transmission to the fetus has been demonstrated at rates of 24% to 75%. Also, this virus is responsible for many fetal defects, neonatal inborn malformations, mental retardation and hearing deficit of children in developed countries beside various syndromes in children and adults. Rapid and correct diagnosis of congenital HCMV infection in neonates is very important to advocate the employed for detection of HCMV specific IgM class antibodies to establish right therapy and proper management of the case, ELISA is the most common method current or congenital HCMV infection.

Aim: This study aimed to determine the most suitable method used in the diagnosis of HCMV to achieve the more accurate, sensitive and specific technique.

Methods: 150 newborn babies are included in this study and their samples are selected from neonatal program for early discovery of thyroid in Taif Governorate during May 2015 till October 2015. All samples are examined for the presence of HCMV antibodies IgG, IgM by available different methods [Detection of HCMV IgG using ELISA technique, HCMV IgM using ELISA technique, chemiluminescent technique for HCMV (IgG, IgM) detection, monoclonal antibodies test for HCMV (IgG, IgM) detection, detection of HCMV (IgG, IgM) using ELFA technique].

Result: The results showed that CLIA is the best method for detection HCMV antibodies where sensitivity was 97.7%, specificity 99% and accuracy 99.6%, followed by ELISA where sensitivity was 96%, specificity 97% and the accuracy 96.6%.

Conclusion: This study provides data on testing for congenital HCMV infection among newborn program for early discovery of thyroid disease in Taif. The comparative evaluation of available used assays showed that CLIA has the most sensitive, specific and accurate test followed by ELISA, ELFA then finally MAB test. We can conclude that, it is recommended to use CLIA in detecting HCMV antibodies for it is advantage beside short time consumption.

Biography

Taghreed M Al-thowaibi has received her Bachelor's degree in Biotechnology and her Master's degree in Microbiology specialized in Virology. She has attended several courses and seminars and for practical experience in some major hospitals and education institutions labs. Her research interest involves the global burden of infectious disease and viruses. 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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