1170. CSF HSV PCR Testing in Adults and Children with Meningitis and Encephalitis

Liliana Parra, MS1; Rodrigo Hasbun, MD, MPH1; Lucrecia Salazar, MD1; Elizabeth Aguilera, MD2 and Susan Wootten, MD1. 1Infectious Diseases, University of Texas Health Science Center, Houston, Texas, USA; 2Infectious Diseases, University of Texas Health Science Center at Houston, McGovern Medical School, Houston, Texas, USA

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Background. Herpes simplex virus (HSV) is a common treatable cause of meningitis and encephalitis. Delayed antiviral therapy is associated with worse clinical outcomes in HSV encephalitis.

Objectives. To determine the utilization of a cerebrospinal fluid (CSF) HSV polymerase chain reaction (PCR) and identify predictors for a positive HSV PCR result.

Methods. A retrospective review of 751 adults and children with meningitis and encephalitis admitted at 9 hospitals in Houston TX from January 1 2005 to December 31 2010.

Results. Of 751 patients, 331 (44%) underwent CSF HSV PCR testing. Adults were more commonly tested than children (84% vs. 69%, P < 0.0001). Additionally, patients with more comorbidities and clinical findings of encephalitis (e.g., altered mental status, focal neurological findings, seizures) were more commonly tested for HSV (P < 0.001). Patients tested for HSV were also more likely to be evaluated for West Nile Virus, receive empiric acyclovir and have worse outcomes (P < 0.001). In total, 48 of 331 (14.5%) were HSV PCR positive. The sensitivity and specificity of the CSF HSV PCR for a positive CSF HSV PCR on logistic regression analysis were: sensitivity (odds ratio [OR], 2.181 [1.090–4.366], P = 0.028); lymphocytic pleocytosis >50% lymphocytes (OR, 6.187 [1.412–27.11], P = 0.016); and CSF protein >100mg/dl (OR, 3.279 [1.105–9.731], P = 0.032).

Conclusion. It was uncommon for HSV PCR to be performed in community acquired meningitis and encephalitis and is done more frequently in adults and in those with an encephalitis presentation.

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1171. The Expression of hsp-miRNA-200b-3p and -200c-3p in Human Cytomegalovirus-infected Formalin-Fixed, Paraffin-Embedded Tissues

Kyoung Hwa Lee, MD1; Seoyeon Min, MS1; Seul Gi Yoo, MD2; Beom Jin Lim, MD, PhD1; Jeong Hyeon Jo, MD1; Sang Hoon Han, MD, PhD2 and Young Goo Song, MD, PhD1. 1Infectious Diseases, Division of Laboratory Medicine, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, Korea, Republic of (South); 2Infectious Diseases, Department of Internal Medicine, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, Korea, Republic of (South), Department of Pathology, Yonsei University College of Medicine, Seoul, Korea, Republic of (South)

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Background. Human cytomegalovirus (HCMV), which exist as asymptomatic latent status, can cause the tissue invasive disease through reactivation in various immunocompromised conditions. Hsp-microRNA has a specific function of post transcriptional suppression through binding with 3’ untranscribed region (UTR) of mRNA. In previous study, we have reported that hPIV3 and HCMV had high level of expression in normal condition and hPIV3 and HCMV infection in infected condition with 3’UTR of mRNA encoded by HCMV UL 122–123 region, which translate the immediate early protein 2 (IE2) protein. IE2 (pp86) plays an essential role to initiate and regulate viral early (E) gene activation as well as propagate the subsequent steps of HCMV lytic replication. This study was aimed to evaluate whether HCMV infected tissue had a lower expression level of hsp-miR-200b-3p and -200c-3p.

Methods. We had collected the formalin-fixed, paraffin-embedded tissues (FFPEs) with cytopathic pathologic findings as well as positive immunohistochemical stain (IHC) test for HCMV (FFPEs) with neither infection nor inflammation as well as FFPEs which had been infected with HCMV. We performed TaqMan real-time PCR (RT-PCR). For hsp-miRNA-200b-3p and -200c-3p, we used oligo-dT primers and the hsp-miRNA expressions were detected by a real-time PCR with SYBR green. The results were measured by the expression of hsp-miRNA-200b-3p and -200c-3p relative to U6 small nuclear RNA (U6 snRNA) and the significant differences were evaluated by Student’s t-test.

Results. We had collected the formalin-fixed, paraffin-embedded tissues (FFPEs) with cytopathic pathologic findings as well as positive immunohistochemical stain (IHC) test for HCMV (FFPEs) with neither infection nor inflammation as well as FFPEs which had been infected with HCMV. We performed TaqMan real-time PCR (RT-PCR). For hsp-miRNA-200b-3p and -200c-3p, we used oligo-dT primers and the hsp-miRNA expressions were detected by a real-time PCR with SYBR green. The results were measured by the expression of hsp-miRNA-200b-3p and -200c-3p relative to U6 small nuclear RNA (U6 snRNA) and the significant differences were evaluated by Student’s t-test.

Conclusion. The low expression of hsp-miRNA-200b-3p and -200c-3p could play a pathophysiological role of development of HCMV tissue-invasive disease.