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# ABSTRACT BOOK

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OP 044

Viruses, tumors and immunocompromised hosts

**DIAGNOSTIC UTILITY OF CYTOMEGALOVIRUS DNA QUANTITATION IN PATIENTS WITH ULCERATIVE COLITIS**

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**BACKGROUND-AIM**

Human cytomegalovirus (CMV) colitis is an important clinical entity associated with severe complications and high morbidity in ulcerative colitis (UC) patients. The clinical symptoms of UC exacerbation and CMV colitis are pretty similar. The in situ detection of viral markers by immunohistochemical analysis is the gold standard for a specific diagnosis of CMV colitis. The detection of CMV nucleic acid is widely used and easy to perform. However, the value of the quantification of CMV DNA has yet to be established for diagnosis. This study aims to determine the optimal diagnostic value of CMV DNA in colon tissue and plasma samples from UC patients.

**METHODS**

Eighty-one adult UC patients suspected of CMV colitis between January 2019 and March 2022 were included in this study. All patients were seropositive for CMV at the time of sampling. The CMV DNA was investigated using the Abbott RealTime CMV assay (Abbott Park, Illinois, U.S.A.) with the real-time polymerase chain reaction (Rt-PCR) method in 81 colon tissues and 43 plasma samples. In tissue samples, CMV DNA copies per mg were calculated. CMV markers were investigated by immunohistochemistry (IHC) and hematoxylin and eosin staining (H&E). The optimal diagnostic viral load in tissue and plasma was assessed based on IHC.

**RESULTS**

CMV-specific staining was detected 9.8% (n=8/81) in tissue samples by IHC and 1.2% (n=1/81) by H&E ($p<0.001$). CMV DNA was detected 63.0% (n=51/81) [median 20 copies/mg (0-160159)] in tissue samples and 58.5% (n=25/43) plasma samples [median 20 copies/mL (0-1937)]. Based on the IHC, the CMV DNA positivity's sensitivity (SN), specificity (SP), positive predictive value (PPV), and negative predictive value (NPV) are 100.0%, 41.9%, 15.7%, and 90.1% for tissue, and 100.0%, 48.6%, 24.0%, and 100% for plasma CMV DNA respectively. With ROC analysis, >392 copies/mg (SN; 100%, SP; 83.6%) in tissue and >578 copies/ml (SN; 66.7%, SP; 83.6%) in plasma were found to be an essential utility for diagnosis.

**CONCLUSIONS**

In this study, CMV DNA positivity in tissue and blood samples has high sensitivity and low specificity for CMV colitis. However, detection of CMV viral load may be helpful in increased specificity. There is no standardised method for quantifying CMV DNA, especially in tissue samples, so each centre should generate its data.

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