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Poster Session V
Infections in immunocompromised patients

ROLE OF CYTOMEGALOVIRUS DNA MEASUREMENT IN DIAGNOSIS AND MONITORING OF ACTIVE INFECTION IN PATIENTS RECEIVING IMMUNOSUPPRESSIVE THERAPY.

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Objectives: Cytomegalovirus (CMV) is among the most common and potentially lethal infectious agents in immunocompromised patients. Quantification of CMV load in blood has become the mainstay of clinical management allowing for direct deployment of antivirus therapy, assessment of the response to therapy and recognition of cases with drug resistance. In the present study, we implemented a Quantative Polymerase Chain Reaction (Q-PCR) assay for measuring CMV-DNA and we also investigated clinical characteristics and outcome among patients receiving immunosuppressive therapy.
Methods: A total of 156 patients with a hematological (146) or solid-organ (10) malignancy and 25 transplanted patients were enrolled in this study. All of them were hospitalized with clinical suspicion of CMV infection. Plasma samples from all patients were processed with Q-PCR (Light Cycler, CMV Quant, Roche Diagnostics). Additionally, in all CMV-DNA positive patients, serum CMV antibody (IgG and IgM) titers were measured via microparticle enzyme immune assay (AxSYM, Abbott). The association between viral load in plasma and clinical data was also investigated.
Results: According to serology, IgM was negative in all cases except one (kidney transplant patient). By performing PCR, 28 cases of active infection were diagnosed (16 with hematological malignancies, 2 with solid-organ malignancies and 10 transplanted). Chronic lymphocytic leukemia was the major underlying disease in the group of hematological patients (87.5%). Among patients with CMV disease, pneumonitis was the most common clinical presentation (71%). Other opportunistic infections were noted in 14% patients, all with a hematological malignancy. Overall, the median blood CMV viral load was 1840 (range 351-58700) copies/ml. In patients with hematological malignancies, the median load was found to be 1970 copies/ml, in patients with solid-organ malignancies 622 copies/ml, whereas in transplanted patients the median load was found to be 2355 copies/ml. The overall mortality rate was 18% and the major causes of death were respiratory failure and sepsis. All died patients had hematological malignancy and high viral load (median 43300 copies /ml). All CMV PCR positive patients received ganciclovir. The treatment led to a marked decrease in CMV DNA copy number. The length of treatment needed to control CMV replication and obtain a negative result via PCR method, after implementation of treatment, were 27 (range 13-45) days.
Conclusion: The spectrum of CMV infections for immunosuppressive patients is expanding and diagnosis has increased due to the advent of new molecular diagnostic techniques. Furthermore, the time lag between primary infection and IgM production, as well as the failure of immunosuppressive patients to produce IgM antibody significantly decreased the clinical utility of serology in diagnosing CMV disease. So, CMV quantification will continue to have a crucial role in delivering individualized patient management in a variety of clinical settings.