A Rare Cause of Fever, Chills, Myalgias and Diarrhea in an Immunocompetent Host

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Introduction
Cytomegalovirus (CMV) infection is usually asymptomatic in the healthy immunocompetent host. Despite seventy percent of U.S. adults having been infected with CMV, severe disseminated infection is typically only seen in congenital infections and infections in immunocompromised hosts, such as transplant patients and in patients with acquired immunodeficiency syndrome (AIDS). We report a case of disseminated infection in an immunocompetent patient.

Case Presentation
History
A 50 y/o female schoolteacher with a no significant PMH presented to the ED with one week onset of fever, chills and myalgias. After a 3-day hospital stay and workup she was discharged with the diagnosis of flu.

She subsequently was seen as an outpatient and given empiric antibiotics for UTI or pyelonephritis that had no effect on her fevers to 104 F.

The patient was readmitted with fevers, rigors, abdominal pain, nausea, bloody emesis and diarrhea. She also reported headaches with the fevers. Patient denied any recent contacts or recent travel.

Physical Exam
- Vitalis: T 101.8 F Tmxx 101.6 F BP 122/70 Pulse: 93 O2 Sat 94% on RA
- HEENT: No palpable nodes
- Lungs: CTA
- Heart: Regular Rhythm, no murmurs.
- Abdomen: Soft, non-tender, no masses or hepatosplenomegaly on exam
- Skin: No rash

Hospital Course
During her hospital stay the patient underwent an extensive workup to determine the cause of her fevers and chills. (see additional studies)

Finally after at the end of the workup she was found to have positive titers for CMV IgG and IgM.

Her CMV DNA PCR revealed a high virion copy number (5949) and an immunoglobulin panel revealed elevated IgM at 421.

She was subsequently treated with Valganciclovir 900 mg BID and discharged home with improvement in her clinical condition and liver transaminases.

Discussion
- Cytomegalovirus is a double-stranded DNA virus, from the Herpesviridae family. Transmission of this virus occurs via sexual contact, breast milk, respiratory droplets, blood transfusions, and vertical transmission. Typical CMV Infections cause a subclinical, mononucleosis-like self-limiting syndrome. In these cases symptoms can include malaise, fever, mild liver function abnormalities and lymphophotis with atypical lymphocytes (occurring in 10% of immunocompetent adults).

- Disseminated CMV and/or complications of a CMV infection rarely occur in an immunocompetent host.

- Known risk factors for reactivation of a prior CMV infection include the first 100 days status post tissue or bone marrow transplant and HIV (AIDS) (CD4+ < 200) or with a viral load > 10,000 copies). CMV infection in utero can result in congenital abnormalities involving but not limited to sensorineural hearing loss, chorioretinitis, and periventricular calcifications. CMV retinitis is associated with CD4+ <50/mm3.

- Our patient tested negative for any disease or condition that would place her in an immunocompromised state.

- Although rare, our case demonstrates that one should consider the diagnosis of disseminated CMV in the differential of unknown causes of fever, chills, and diarrhea with elevated liver enzymes even in an immunocompetent host.

Imaging & Other Studies
- CXR was negative
- CT of the Chest W/CTA revealed scattered nodules in the left lung with a focus on the left upper lobe and tiny bilateral pleural effusions.
- Abdominal Ultrason revealed a mildly enlarged liver and hepatoatrial sludge with no stones and the patient was noted to have a positive sonographic Murphy’s sign.
- CT abdomen and pelvis revealed mild splenomegaly and scattered bilateral inguinal lymph nodes.
- Echocardiogram- Normal with no evidence for thrombus or vegetation.
- Bone Marrow Biopsy- Negative
- Hepatobiliary Nuclear Study: EF 17%, delayed gallbladder emptying may represent chronic cholecystitis.

Labs
- Initial CBC on readmission: WBC 5.0 Hgb 9.9 Plt 174 normal diff
- Initial CMV on readmission: ALT 96 (H), AST 127 (H), Alk Phosp 1530 (H), Alb 2.8 (L) Normal Na, K, Cl, CO2, Protein, Total Bilir, and eGFR
- Negative Blood and Urine cultures
- Negative C. diff PCR studies
- Negative HIV, HSV 1 & 2, and acute Hepatitis Panel
- Negative EBV including EBV quantitive qPCR
- Negative Cocci, Resp Virus panel
- Negative Influenza, RSV, Parvo B19, West Nile Virus, Enterovirus
- Negative CSF studies
- Positive Mycoplasma IgG 2.67 but Negative Mycoplasma IgM 196
- Negative Cold hemagglutinins
- Negative Malaria smear
- Negative布鲁cella IgG and IgM, Q Fever IgG and IgM, RMSF IgG and IgM
- Positive sedimentation rate 60 H
- Positive CMV titers IgG and IgM 421(H)
- CMV DNA PCR 5949 virions

CMV Structure4

References