

A 10-year case series of HHV8-related diseases in an ethnically diverse HIV cohort: is human herpesvirus 8 level a clue to the underlying pathology?

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INTRODUCTION

Kaposi's sarcoma (KS), multicentric Castleman's disease (MCD) and primary effusion lymphoma (PEL) are driven by Human herpesvirus 8 (HHV-8). HHV8 DNA levels are a tool to support diagnosis but whether they can differentiate between the different pathologies is not clear ^{1,2}. We describe the burden of HHV8 related disease in an ethnically diverse cohort seen at a single centre in South East London between 2010-2020 .

METHODS

This is a retrospective cross-sectional study of patients with biopsy proven HHV8 related disease between March 2010-March 2020. Patients were identified via a search of the virology database for plasma HHV8 DNA requests and cross referenced with HIV in-patient and histopathology lists covering the same timeframe. Values are expressed as medians (IQR). A Mann-Whitney U test was applied to CD4 nadir, plasma HHV8 DNA level, CD4 count and time on ART at diagnosis of HHV8 disease to compare KS and MCD.

TABLE 1: Average laboratory parameters at time of HHV8 disease diagnosis by disease group

| | KS (N=28) | MCD (N=14) | P value |
|------------------------------------|-----------------|------------------------|---------|
| CD4 Nadir (cells/mm ³) | 66 (21-165) | 136 (46-219) | 0.159 |
| CD4 (cells/mm ³) | 75 (27-165) | 219 (134-489) | 0.003 |
| Plasma HHV8 DNA (copies/ml) | 290 (100-14500) | 150000 (19000-1050000) | 0.003 |
| Time on ART (months) | 0.9 (0-7.8) | 23.9 (2.4-62.4) | 0.048 |
| Proportion HIV virally suppressed | 3/28 (10.7%) | 7/14 (50%) | |

RESULTS

- 43 patients were identified, 28/43 (65.1%) were diagnosed with KS, 14/43 (32.6%) with MCD of which 5/43 (11.6%) had concurrent KS, and 1/43 (2.3%) PEL.
- The median age at diagnosis was 42 (35-53).
- 25/43 (58.1%) of patients were Black, 12/43 (27.9%) Caucasian, 5/43 (11.6%) Hispanic and 1/43 (2.3%) Asian .
- 11/43 (25.6%) of patients were female.
- HHV8 DNA levels were available at time of diagnosis in 22/28 (78.6%) of KS patients, and in all patients with MCD/PEL.
- Both HHV8 DNA levels and CD4 count at disease diagnosis were significantly higher in patients with MCD than with KS (*table 1*).
- 10/28 (35.7%) of KS patients received chemotherapy and 5/28 (17.9%) received radiotherapy.
- 11/14 (78.6%) of patients with MCD received chemotherapy and the patient with PEL died before treatment could be initiated.

CONCLUSION

We describe a cohort of patients with HHV8-driven disease. KS was seen in immunocompromised patients with uncontrolled HIV whilst patients with MCD had significantly higher CD4 counts and half had well controlled HIV. Our results show the diagnosis of MCD was associated with significantly higher HHV8 levels, therefore this is a potentially useful diagnostic tool.