

Introduction

As HIV patients survive longer, cases of spontaneous subarachnoid hemorrhage (SSAH) in this population become more prevalent. Experience with this subset of SSAH patients predisposed to arteriopathy builds on our understanding of their outcomes. To date, 3 ruptured cerebral aneurysms in HIV adults have been reported. We expand on this literature with 13 additional SSAH cases in patients with HIV.

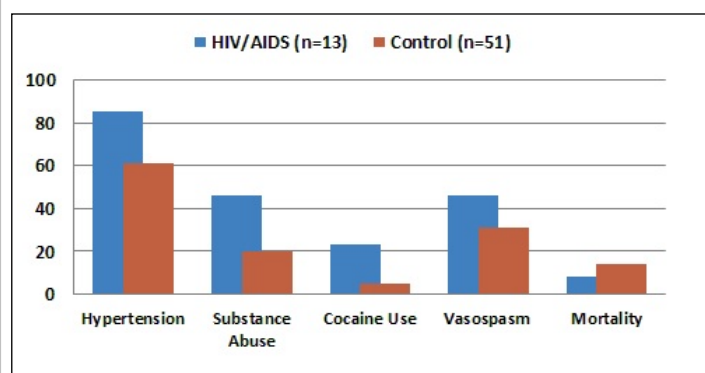
Methods

Chart review was performed for all patients with non-traumatic SAHs from 2005-2012 at our institution. Of 415 patients identified, 13 were HIV positive. Data including demographics, comorbidities, Hunt-Hess and Fisher grades, and outcomes were collected. Fifty-one age-matched, non-HIV SSAH patients were identified.

Results

HIV/SAH patients were similar to controls in regards to age and sex. Hypertension was noted in 85% of the HIV group and in 61% of controls. 23% of HIV patients used cocaine preceding presentation and 46% had substance abuse histories, compared to 5% and 20% in controls, respectively. Furthermore, viral load was highly variable and undetectable in 4 patients, and average CD4 count was 449.

54% of HIV patients presented as Hunt Hess grade 1 and 46% as higher grades, compared to 33% and 67% in controls, respectively. Non-diagnostic angiograms were seen in 23% of HIV patients and 16% of controls. 31% of controls had vasospasm compared to 46% in the HIV group. 61% of HIV patients and 53% of controls were neurologically intact upon discharge, and there was 8% and 14% mortality for HIV and control patients, respectively.



Conclusions

Classically-associated risk factors are seen in patients with SSAH and HIV, and low CD4 counts, advanced age, and vasospasm were seen with poorer outcomes. More HIV patients had substance abuse and hypertension histories, perimesencephalic bleeds, and vasospasm compared to controls. Yet, they presented and were discharged with better neurological examinations overall compared to their non-HIV counterparts.

It is still unclear how comorbid HIV affects SSAH and more data is required, with greater sample sizes, in order to reach any definitive conclusions.

Learning Objectives

The goal of this reports is to: 1) Identify risk factors for HIV patients who develop subarachnoid hemorrhages, 2) Utilize the presented data to obtain a schema for outcomes in this population, 3) Delineate differences between subarachnoid hemorrhage patients with and without comorbid HIV.

References

1. Hamilton DK, Kassell NF, Jensen ME, Dumont AS. Subarachnoid hemorrhage and diffuse vasculopathy in an adult infected with HIV. Case report. *J Neurosurg.* 2007 Mar;106(3):478-80
2. Silvestrini M, Floris R, Tagliati M, Stanzione P, Sancesario G. Spontaneous subarachnoid hemorrhage in an HIV patient. *Ital J Neurol Sci.* 1990 Oct;11(5):493-5
3. Miyamoto S, Hara T, Tabei Y, Honma H, Kondo T, Oka S. Aneurysmal subarachnoid hemorrhage in a patient with human immunodeficiency virus type 1 infection. Case report. *Neurol Med Chir (Tokyo).* 2006 Jul;46(7):348-52
4. Modi G, Ranchod K, Modi M, Mochan A. Human immunodeficiency virus associated intracranial aneurysms: report of three adult patients with an overview of the literature. *J Neurol Neurosurg Psychiatry.* 2008 Jan;79(1):44-6
5. Maniker AH, Hunt CD. Cerebral aneurysm in the HIV patient: a report of six cases. *Surg Neurol.* 1996 Jul;46(1):49-54