Intracranial Meningioma in the Era of HIV and Antiretroviral Therapy, in KwaZulu-Natal South Africa

Mogwale Samson Motebejane MD; Erastus Kiratu MD

Department of Neurosurgery, Inkosi Albert Luthuli Central Hospital, University of Kwazulu-natal, Durban, South Africa

CNS 2016 ANNUAL MEETING San Diego CALIFORNIA SEPTEMBER 24-28, 2016

UNIVERSITY OF KWAZULU-NATAL

Introduction

Meningioma comprises approximately 33% of all primary brain tumours .Overall incidence in general population is 2.3/100000. The incidence increases with each decade of life and peaks in the 5-6th decade. Despite being benign in pathophysiology in 90% of histology, like carcinomas, they always result from clonal outgrowth derived from a single cell as exemplified by cytogenetic and array-comparative genomic hybridization studies. Approximately 12% of all human cancers are caused by oncoviruses, however the causal relationship between meningioma and viruses, although suggested has not been proven.

Learning objective

- To demonstrate that meningioma in HIV positive occur at a younger age and usually are of higher grade
- To be able to discuss why such high incidence of WHO grade 2 and 3 meningioma seen in HIV positive patient is not seen in other immunossuppressive state if failure of immune surveillance is the cause.
- To identify potential novel therapies that may inhibit the vurulent particles of hiv such as Tat-protein in the therapeutic and preventative armamentorium.

Methods

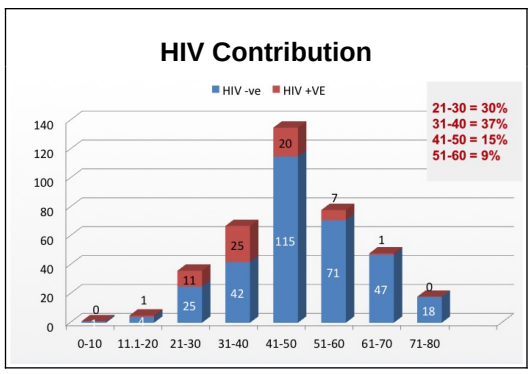
A retrospective chart review of all consecutive patients with pathologically confirmed intracranial meningioma in our institution over a period of 15 years.

Data was extracted from electronic filing system, and images from the pax. information extracted include demographic,histology, tumour location, HIV status, CD4 counts and HAART.

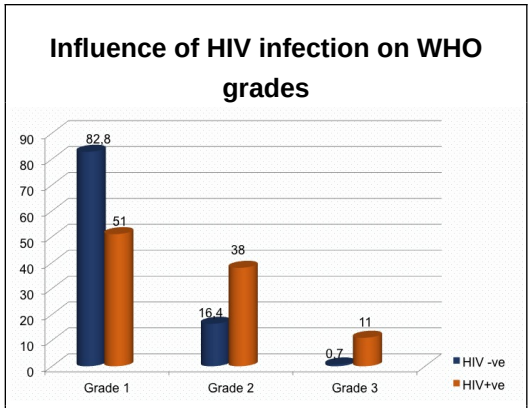
Results

Our search identified 388 patients with pathologically confirmed intracranial meningioma. Median age was 47 years. Male: Female ratio of 1:3.5. Sixty four (17%) of the patients were HIV positive, and 62.5% (40) of them had their CD4 count known. 18(28%) of this patient who are HIV positive were on ARVs. Median age of HIV positive patient (38 years) was significantly younger than the rest of the group.

WHO Grade 2 accounted for 19.2% which is higher than expected. Patients who are HIV positive harbored even higher percentage of WHO grade 2 (38%) P=0.001, RR=2.59, (95%CI 1.59-4.22) and WHO Grade 3 (11%), P=0.001, RR 20.10 (95%CI 2.55-15.8).

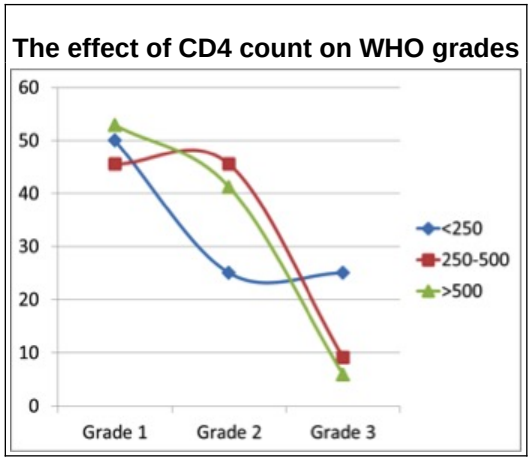


Patients between age categories 20-30 and 31-40 represented the highest burden of HIV infection.



HIV infection confer high likelihood of higher grades meningioma

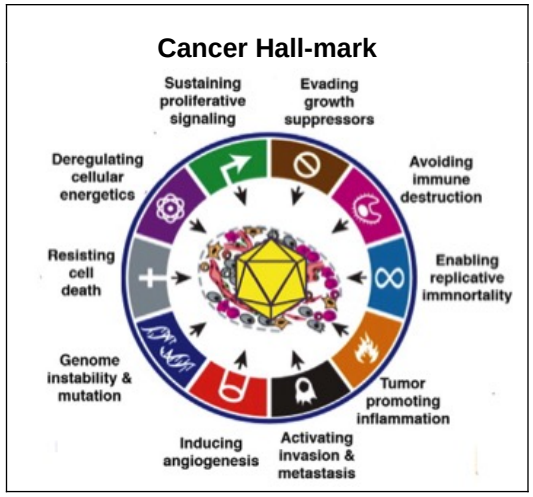
There was no statistically significant difference in the WHO grades in patients with CD4 Count above 250, P=0.75, RR 1.14 (95%CI 0.49-2.63)



Conclusions

Intracranial meningioma among patients who are HIV positive occur at a younger age and tend to harbor histologically higher grade. Failure of immune-Surveillance alone may not fully account for the behavior of meningioma in HIV infected patients.

There is body of evidence which suggest that HIV-Tat protein may directly play a role in meningioma development and progression.



References

- Pearson B.E, Markert J.M,Fisher W.S, Guthrie B.L, Fiveah J.P, Palmer C.A, Riley K: Hitting the moving target: Evolution of a treatment paradigm for atypical meningioma amid changing diagnostic criteria; Neurosurg Focus 24(5):E3;2008

- Nunnery G, Smith J.A, Daniel R: HIV-1 Tat and AIDS-Associated cancer: Targeting the cellular anti-cancer barriers; Tournal of experimental and clinical cancer research, 2008;27:3