HIV positive with new onset headache

Study details	Patients	Cohorts	Outcome measures	Effect size	Comments
Author & Year: Gifford and Hecht, 2001[320] **Study design:** Retrospective cohort study **Setting:** 2 hospitals in San Francisco, USA. Department NR. **Length of follow up:** Over 10 years (January 1986 to June 1996)	**Patient group:** HIV infected adults presenting with headache and undergoing head CT scan. **Inclusion criteria:** Patients with HIV/AIDS; had received a head CT with contrast to evaluate headache; were HIV infected at the time of the CT scan. **Exclusion criteria:** Prior history of *Toxoplasma gondii*, primary brain lymphoma or other intracranial mass lesions; had brain imaging (head CT or MRI) or meningitis during the previous 30 days. **All patients** **N**: 364 **M**=342; **F**=22 **Age:** <30 years: n=71, 30-39 years: n= 204, ≥40 years: n=89 **Low risk group** (n)=35 **Intermediate risk group (**n)=242 **High risk group** (n)=87	Study cohort receiving head CT was classified into the following risk categories of having an intracranial mass lesion. **Low risk** (no focal neurological signs, no altered mental status, no seizure, CD4 count> 200 cells/µl) **Intermediate risk** (no focal neurological signs, no altered mental status, no seizure, CD4 count< 200 cells/µl) **High risk** (focal neurological signs, altered mental status, or seizure)	**Presence of intracranial mass lesions**	**1.Low risk group**: 0(0%, 95% CI 0% to 10%); n=35 **2. Intermediate risk group:** 22 (9%, 95% CI 2% to 16%); n=242 **3. High risk group:** 18 (21%, 95% CI 12% to 29%); n=87 P values 1v2, p<0.05 2v3, p<0.01	**Funding:** California University-wide AIDS Research Program and Department of Veteran affairs **Limitations:** No control group. Age range not specified. Study does not list the confounding factors *a priori*. **Additional outcomes**: Clinical variables independently associated with abnormal head CT result.

Abbreviations: NR=not reported, NA=not applicable, M/F=male/female, N=total number of patients randomised, SD=Standard deviation, SE=Standard error, CI=Confidence interval, HIV= human immunodeficiency virus, AIDS= Acquired immune deficiency syndrome, CT= computed tomography, MRI= Magnetic resonance imaging

Study details	Patients	Cohorts	Outcome measures	Effect size	Comments
Author & Year: Singer et al, 1993 & 1996[734,735] **Study design:** Prospective cohort study **Setting:** Outpatient setting, Los Angeles, USA	**Patient group:** Adult HIV+ ambulatory male volunteers recruited through advertisements and local sources. **Exclusion criteria:** Inability to give informed consent, medical contraindication to lumbar puncture or CNS opportunistic infection or tumour identified prior to evaluation **All patients** **N:** 229 **Group 1:** Had HIV-1 associated headache **N:** 98 **Age (mean):** 38.1±9.7 years **History of non-HIV related neurologic disease:** 35/98 (36%) HIV related neurologic disease: **Group 2 :** Did not have HIV-1 associated headache **N:** 131 **Age (mean):** 39.9±10.6 years **History of non-HIV related neurologic disease:** 30/130 (23%)	**Group 1:** HIV-1 associated headache Patients were classified as having HIV-1 associated headache if headaches: • first occurred after the known date of HIV seropositivity, • did not have a clear-cut cause for example, trauma, AZT use • were associated with HIV-1 alone or an associated CNS opportunistic infection or tumour. Also included were patients who had headaches prior to HIV-1 seropositivity but developed a new type of headache that met the above criteria. **Group 2 :** No HIV-1 associated headache Patients were classified as not having an HIV-1 associated headache if: • they reported no headaches • reported headaches that antedated the time of HIV-1 seropositivity and were unchanged since onset • reported headaches that had another clear-cut cause.	**CNS opportunistic infection (at baseline evaluation)** **New HIV-1 associated neurologic disease (at 1 year evaluation)**	**HIV+ with headache:** 2/98(2%) **HIV+ without headache:** 4/131(3%) **New HIV-1 associated headache:** 7/34 (20.5%) **HIV+ without headache:** 8/109 (7.33%)	**Funding:** National Institutes of Mental Health; Department of Veteran affairs; Neurologic AIDS research consortium and AIDS regional Education and Training Centre **Limitations:** 39% of all HIV+ subjects had primary HIV-1 associated neurologic disease (cognitive dysfunction, myelopathy, peripheral neuropathy); headache not in isolation of other symptoms. No confounding factors identified *a priori.* **Additional outcomes:** Association of headaches with systemic disease progression. **Notes:** Study also reported outcomes for another group of 53 seronegative controls.

Abbreviations: NR=not reported, NA=not applicable, M/F=male/female, N=total number of patients randomised, SD=Standard deviation, SE=Standard error, CI=Confidence interval, HIV= Human immunodeficiency virus, AZT= Zidovudine, CNS=Central nervous system