Differences in Acute Retroviral Syndrome by HIV-1 subtype in a multicentre cohort study in Africa

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BACKGROUND

Symptoms of acute retroviral syndrome (ARS) in African adults differ by region and timing of ascertainment. Recall of symptoms, which is higher when evaluated closer to the time of infection, may explain (in part) varying symptoms across cohort studies in Africa.

Reported differences in ARS may lead to under-appreciation of the clinical presentation and delayed diagnosis of patients with acute HIV-1 infection (AHI).

We sought to determine whether reporting of ARS was associated with HIV-1 subtype at nine participating African research centres (CRC), representing countries with predominant HIV-1 subtypes A, C and D.

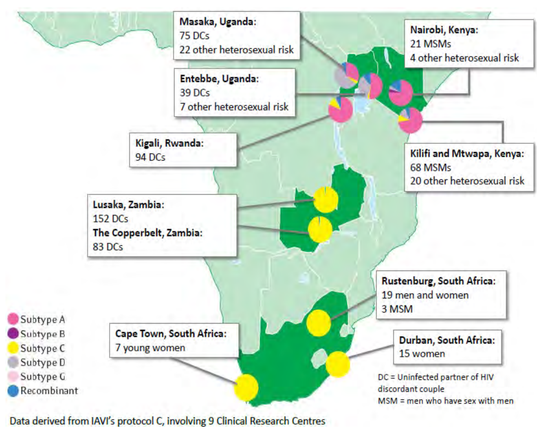
METHODS

Adults with acute or early HIV-1 infection in a multicenter HIV-1 incidence study were enrolled in a sub-study assessing ARS ('IAVI protocol C'), with either monthly or quarterly follow up.

Patients made unscheduled visits when symptomatic, and a blood sample was collected for a p24ag test, and rapid HIV antibody tests.

Estimated date of infection (EDI) was based on a positive plasma viral load or p24 antigen test prior to seroconversion, or the mid-point between a negative and positive HIV-1 serologic test.

Eleven ARS signs and symptoms were assessed at sub-study enrollment. We used log-binomial regression to estimate the prevalence of ARS signs and symptoms ascertained in the period ≤ 42 days after EDI, by subtype (*POL* sequence), and sex.



Data derived from IAVI's protocol C, involving 9 Clinical Research Centres

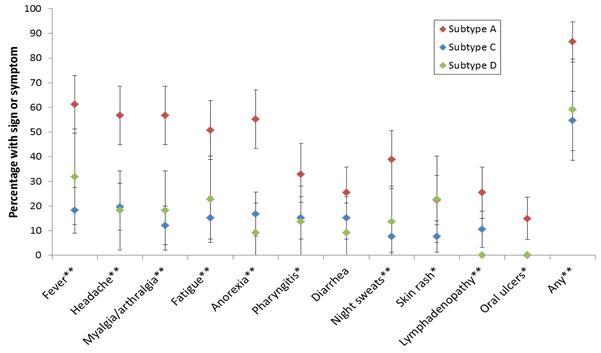
RESULTS

The distribution of subtype among volunteers, number of men and gender ratio ascertained within 6 weeks following EDI was (table):

Total	Subtype A	Subtype C	Subtype D
N = 155	67 (43.2%)	66 (42.6%)	22 (14.2%)
Men, gender ratio	45 (67%)	39 (59%)	13 (59%)

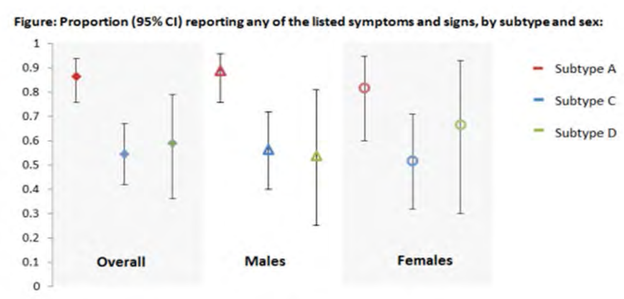
Individuals with subtype A were statistically significantly more likely than individuals with subtypes C and D to report any of the specifically-listed ARS symptoms.

Figure: Prevalence of reported signs and symptoms by HIV-1 subtype



** **A vs. C, A vs. D** comparisons both statistically significant
* Only the **A vs. C** comparison statistically significant

Among those reporting any symptoms (figure), the mean number of symptoms was significantly greater among those with subtype A than among those with subtype C or D. These associations were not modified by sex.



DISCUSSION

To our knowledge, this is the first study from Africa suggesting that signs and symptoms may differ by HIV-1 subtype.

Previously, we showed that the time of ascertainment (following EDI) impacts the prevalence of symptoms reported.

Namely, the prevalence of all symptoms except for fever, diarrhoea and oral ulcers was lower in patients who were evaluated between 6 weeks and 3 months of the EDI, compared to patients evaluated within 6 weeks of EDI.

In the present study, we restricted the data to patients evaluated within 6 weeks of EDI.

CONCLUSION

In this unique multicenter African cohort of patients evaluated within 6 weeks following EDI, individuals with subtype A were significantly more likely than individuals with subtypes C and D to report any of the 11 specifically-listed ARS symptoms.

Clinical recognition of acute HIV infection, subsequent diagnosis, risk reduction counselling, and linkage to care are essential steps in reducing ongoing HIV-1 transmission.

Further studies elucidating differences in innate immune responses by HIV-1 subtype in patients with acute HIV infections are recommended.

REFERENCES

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IAVI gratefully acknowledges the generous support provided by the following major donors

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As of April 2014