Abstract

Background:
An efficacious preventive HIV vaccine will likely require induction of immune responses at mucosal surfaces. One approach is to deliver vaccines intra-nasally. A pilot study was performed in Rwanda and Kenya to determine if anti-HIV antibodies could be detected in nasal secretions collected from the nasal cavity (NC), naso-pharynx (NP) and oral secretions.

Methods:
Nasal samples were collected using FloQ Swabs from 35 HIV-seropositive and 35 HIV-seronegative volunteers. Saliva was collected from parotid glands using Salimetrics Oral Swabs, oral fluid (transudate) was collected into Falcon tubes. Eluted samples were tested for gp140 Env (Clade A UG37) and Gag p24 (Clade B LAI) IgG and IgA antibodies.

Results:
Volunteers indicated that the NC collection was preferable to the deeper NP sample, suggesting that NC sampling may result in greater compliance with repeated sampling. Anti-HIV antibodies were detected in nasal secretions of 100% of HIVseropositive samples with IgG expressed at a higher level than IgA. Anti-gp140 IgG and anti-p24 IgG were detected in 100% and 93.4% of nasal samples, respectively. IgA anti-gp140 and anti-p24 IgA were detected in 94% and 88.5% of nasal samples, respectively. No significant differences were detected between NC and NP samples in magnitude or quantity. All nasal samples from HIV-seronegative volunteers were negative for IgG and IgA antigp140/ p24 except for 4 Rwandan volunteers with low levels of IgA anti-p24.

Conclusion:
NP sampling appeared to have little benefit over NC sampling, and HIV antibodies were detected in all HIV-seropositive individuals. NC sampling may provide a unique and tolerable method to collect antibodies in an HIV vaccine trial following intranasal vaccination.