

Anal intraepithelial neoplasia in HIV-positive patients: a review

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- HIV-positive patients are described with a high rate of anal dysplasia
- Main causes for the progress of this disorderly epithelial growth in anal mucosa is the concomitant HIV and HPV infection

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- This dysplasia is described: high-grade anal intraepithelial neoplasia (HAIN) or low-grade anal intraepithelial neoplasia (LAIN)
- HPV acts as a cofactor for the persistent anal dysplasia in HIV-positive patients
- Precursor lesion for anal squamous cell carcinoma

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- The rate of anal cancer has increased nowadays
- Screening: high-risk HPV DNA test, anal Pap smear protocol and high resolution anoscopy
- Cost-effective

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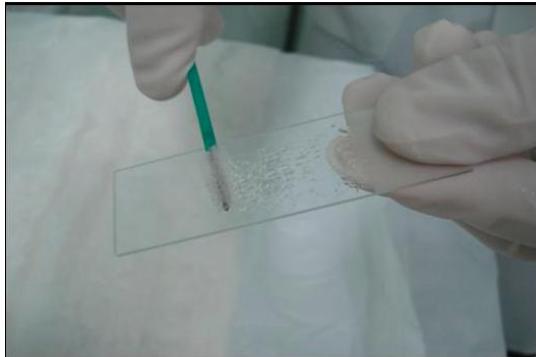
- Aim of this study is to compare the findings of the screening in HIV-positive and negative patients and perform a review of the literature

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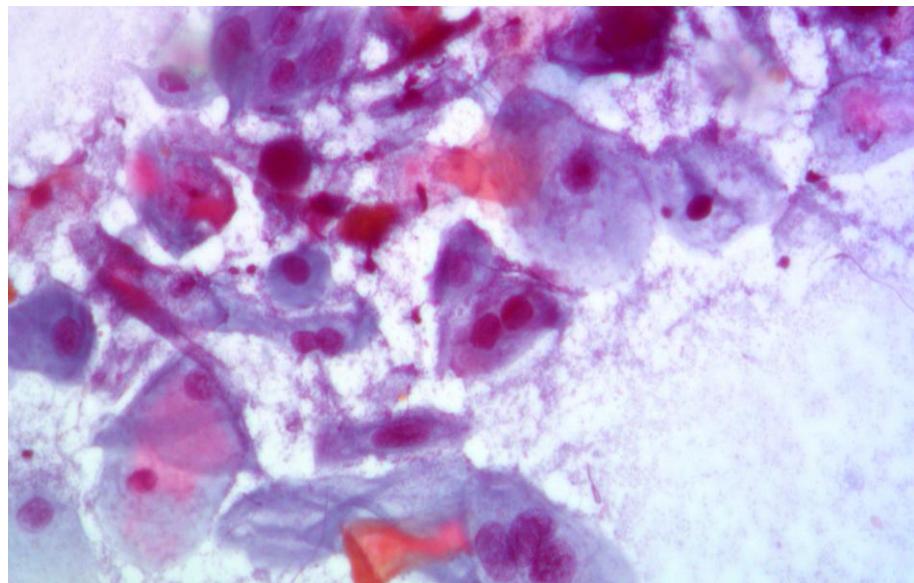
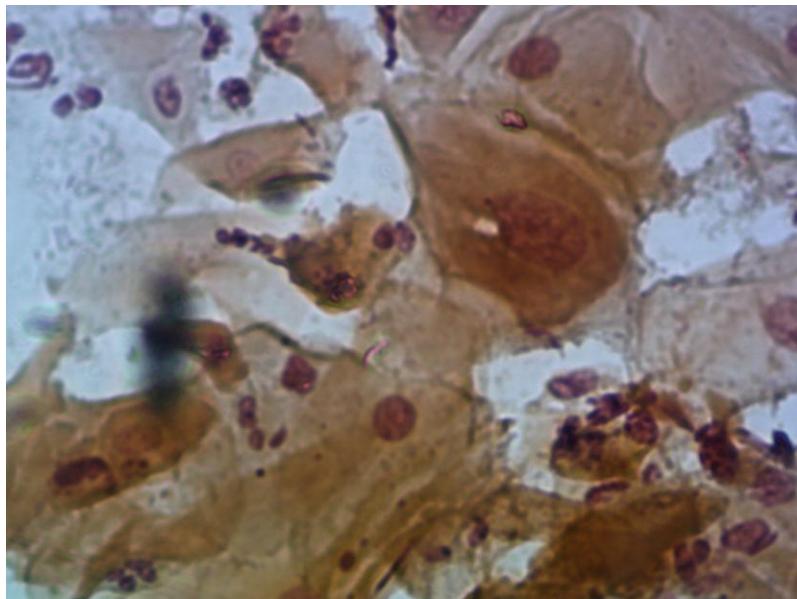
- Evaluated 131 HIV-positive and negative patients at CRT/AIDS São Paulo who had previously anal intercourse from January 2013 to December 2014
- Board Ethical in research was aproved
- No disclosures

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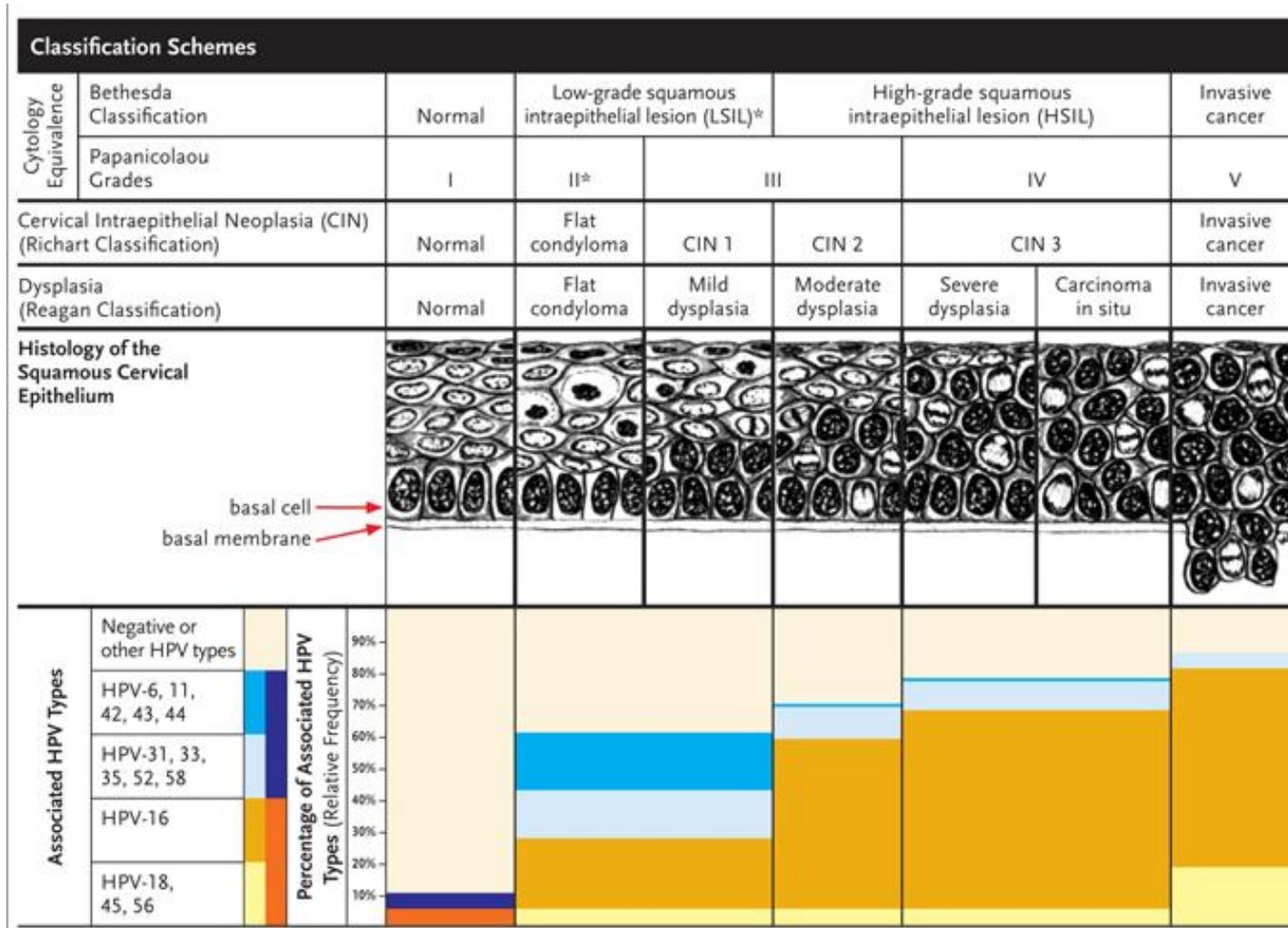
- All of the patients underwent the high-risk HPV DNA test, anal Pap smear protocol and high resolution anoscopy



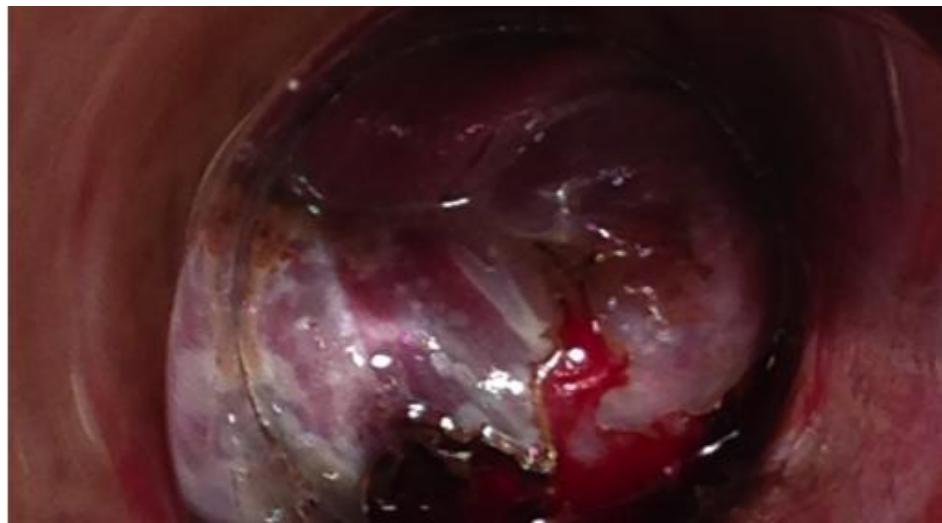
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- Anal lesions were treated with 90% trichloroacetic acid (TCA) and 5% imiquimod for 12 weeks
- The statistical analysis was performed using chi-squared test and the significance level was set at less than 5%

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- Sample: 57 HIV-positive male patients, 35 HIV-negative male patients and 39 HIV-negative female patients
- 18 HIV-positive patients had anal lesions and 43 patients were positive for the high-risk HPV DNA test and had anal dysplasia
- 2 HIV-positive patients had anal cancer



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Presence of anal warts in HIV positive and negative patients

	HIV-	HIV+
Presence of anal warts	39	18
Total patients	74	57
Proportion of anal warts	53%	32%
p-value of test	0.0078	

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Positive high-risk HPV DNA test in HIV positive and negative patients

	HIV-	HIV+
HPV	45	50
Total patients	74	57
Proportion of HPV	61%	88%
p-value of test	0.0003	

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Presence of anal dysplasia in HIV positive and negative patients

	HPV-	HPV+
Anal dysplasia	5	43
Total patients	36	95
Proportion of anal dysplasia	14%	45%
p-value of test	0.0004	

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- Anal intraepithelial neoplasia (AIN) describes the dysplastic changes in the anal canal that are precursors to invasive anal carcinoma
- The natural history of AIN is not entirely known
- The assessment and treatment of these precursor lesions is extrapolated from the management of cervical intraepithelial neoplasia (CIN), given the biological similarities between AIN and CIN

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- Extrapolating from cervical cancer, screening programs for AIN have been initiated with the assumption that screening will have an impact
- Metrics for AIN progression are not documented, but it is inferred that immunosuppressed and HIV-positive patients will likely have a higher rate of progression than other patients

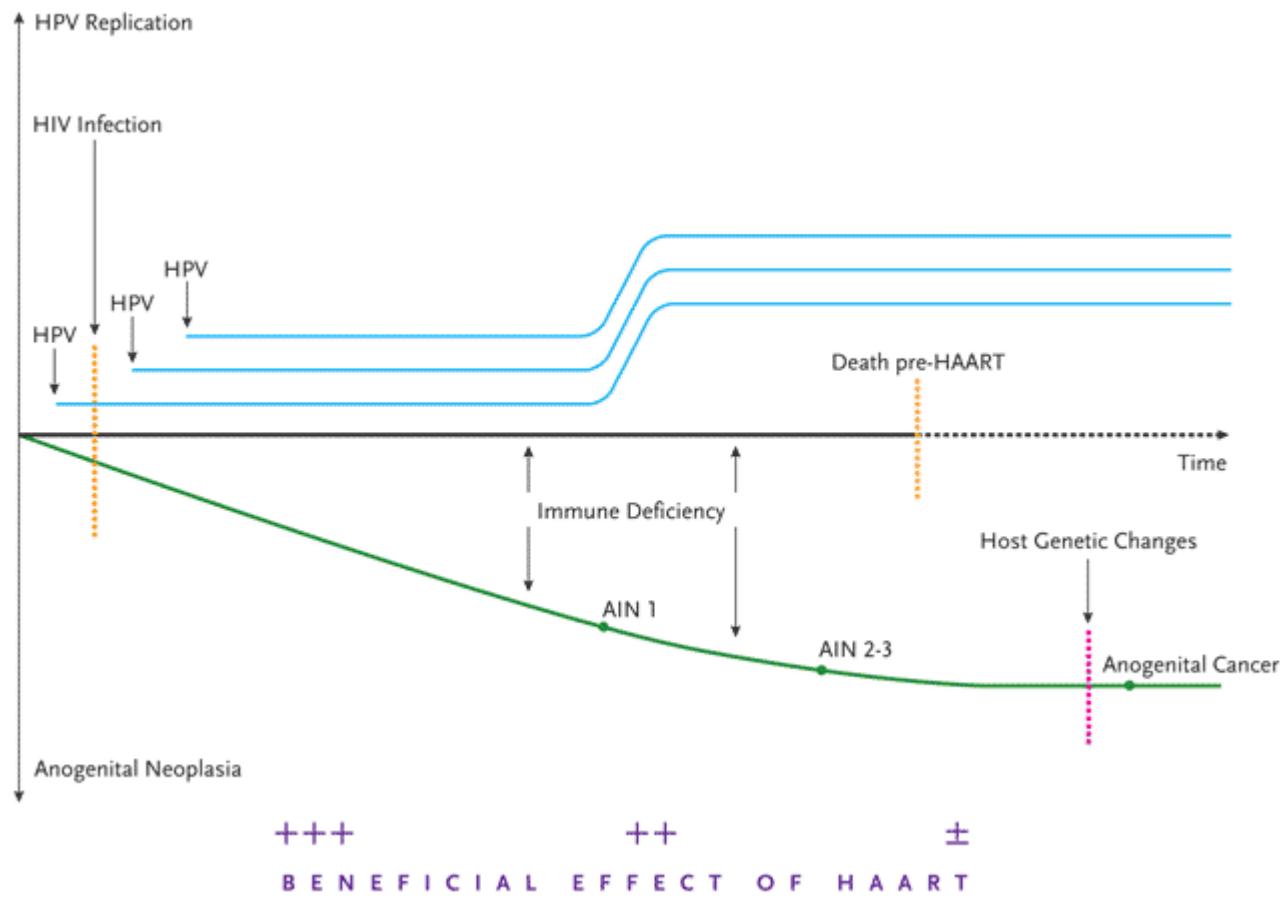
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- There is early evidence that the benefits of highly active antiretroviral therapy (HAART) in terms of restoring immune function and reducing opportunistic infections and some neoplasms may not extend to regression of AIN

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- Under these circumstances it might be predicted that AIN and subsequent progression to invasive anal cancer would rise as HAART prolongs the lives of seropositive people

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- Recent analysis has projected that annual screening for HIV-positive men who have sex with men and biennial or triennial screening for HIV-negative men who have sex with men is cost-effective to prevent anal squamous cell carcinoma in these groups, and offers quality-adjusted life-expectancy benefits comparable to other clinical preventive measures

Goldstone 1999
Goldie 1999

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- In a recent long-term follow-up study of a group of AIN patients that completely cleared their disease with imiquimod, 74% remained free of AIN during a mean follow-up period of 30 months
- High-risk HPV viral loads remained significantly lower than before imiquimod treatment, and persisted at low levels

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- In conclusion, anal dysplasia was more common in HIV-positive patients. High-risk HPV infection was related to anal dysplasia.



