Anal HPV and associated cytological changes in renal transplant recipients

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Background:

The incidence of anal cancer is increasing in Australia, with markedly elevated rates in people with immunosuppressive conditions such as HIV infection. Renal Transplant Recipients (RTR) also have elevated anal cancer rates, typically tenfold higher than the general population. High risk Human papillomavirus (HPV) genotypes are the cause of the majority of anal cancers. We evaluated the presence of HPV-associated anal cytological abnormalities and HPV DNA in adult RTR, to inform the potential development of anal cancer screening guidelines.

Methods:

Following Ethics approval, adult RTR attending post transplant follow up at Westmead Hospital, Sydney completed a demographic and behavioural questionnaire.

A 10 cm Dacron swab was used to collect an intra-anal sample which was eluted into a ThinPrep vial (Figure 2).

This was then tested for cytological changes and for the presence of human papillomavirus (HPV) DNA genotypes using the Cobas 4800 system.

Results: (Figure 1).

Of 38 eligible participants approached, 25 (66 %) consented and 12 (48%) were female. The age range of all participants was 28-75 years (mean 46). All were HIV negative and none reported either life time penile-anal sex or digital stimulation of the anus.

In this cohort all the participants had received a transplant as an adult with a post transplant time range from 1 month to 10 years.

Twenty two (88%) of the 25 anal cytological samples were technically satisfactory. Of these, 17 (77%) of 22 were negative for squamous intraepithelial lesions (SIL). Cytological changes were found in 4 (18%) participants (one low grade SIL and three as possible low grade SIL). Of the positive results three (75%) were women and one (25%) male with an age range of 31-56 (mean 40).

Of the 25 specimens, 23 (92%) had sufficient DNA for testing. One of these (4.3%) was positive for the low risk HPV genotypes 62 and 81.

Figure 1

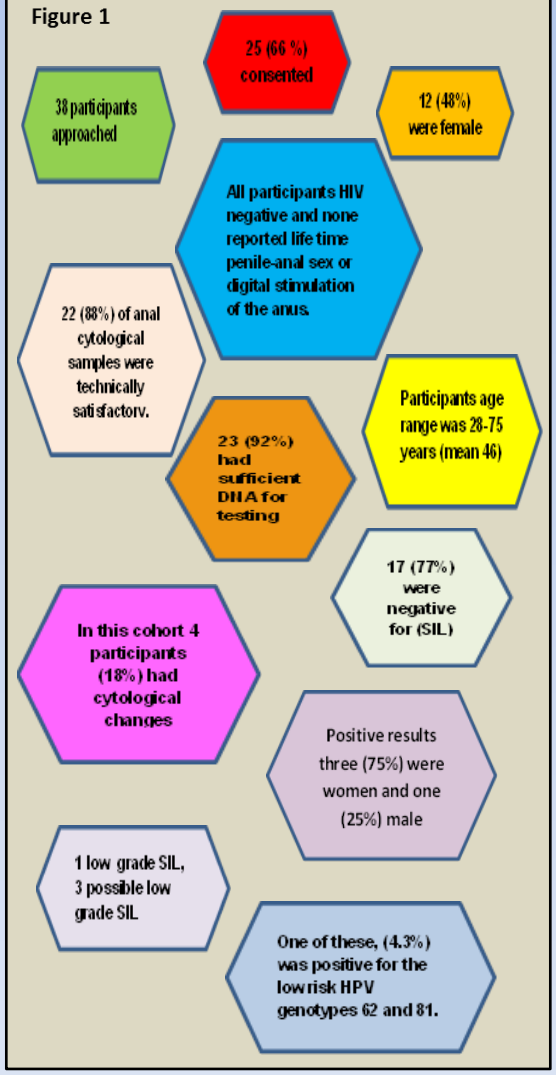
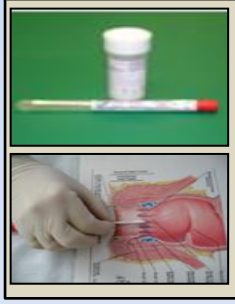


Figure 2



- Dacron swab and a ThinPrep vial
- Insert a moistened Dacron swab 10cm into anus
- Requires a circular, back & forward (jiggle technique) for approximately~ 1 minute
- Exfoliate cells from wall of intranal canal
- Once removed the dacron swab was eluted into a ThinPrep vial for cytology and HPV genotyping.

Conclusion:

Anal swabbing was generally acceptable to RTR. Anal cytological abnormalities were more common than those typically found in cervical screening programs, suggesting the potential value of such an approach.

High risk HPV DNA was not detected in any participant of this small cohort, suggesting that prophylactic HPV vaccination may be of value in RTR. Further study is needed to determine the most appropriate anal cancer screening approaches in this population.