

# Anal Self-Sampling is Suitable for Anal Cancer Screening among Men who Have Sex with Men in Togo

#761

Valentine M. Ferré<sup>1</sup>, Arnold Sadio<sup>2,3</sup>, Romane Guilbaud<sup>1</sup>, Meryem Zaidi<sup>1</sup>, Mawussé K Attiso<sup>4</sup>, Mounerou Salou<sup>5</sup>, Laurent Abramowitz<sup>6</sup>, Mélanie Bertine<sup>1</sup>, Amivi P Amenyah-Ehlan<sup>5</sup>, Ephrem Mensah<sup>4</sup>, Anoumou C. Dagnra<sup>5</sup>, Jade Ghosn<sup>7</sup>, Diane Descamps<sup>1</sup>, Didier K. Ekouevi<sup>2,8</sup>, **Charlotte Charpentier<sup>1</sup>**

<sup>1</sup> Service de Virologie, Université Paris Cité, INSERM, IAME, UMR 1137, AP-HP, Hôpital Bichat-Claude Bernard, Paris, France; <sup>2</sup> Département de Santé Publique, Université de Lomé, Faculté des Sciences de la Santé, Lomé, Togo; <sup>3</sup> Centre Africain de Recherche en Epidémiologie et en Santé Publique (CARESP), Lomé, Togo; <sup>4</sup> NGO Espoir Vie Togo, Lomé, Togo; <sup>5</sup> Laboratory of Molecular Biology and Immunology, University of Lomé, Lomé, Togo; <sup>6</sup> Service de Proctologie, Université Paris Cité, Hôpital Bichat-Claude Bernard, Paris, France; <sup>7</sup> Service de Maladies Infectieuses et Tropicales, Université Paris Cité, INSERM, IAME, UMR 1137, AP-HP, Hôpital Bichat-Claude Bernard, Paris, France; <sup>8</sup> Research Institute for Sustainable Development (IRD), University of Bordeaux, INSERM, Bordeaux Population Health Centre, UMR 1219, Bordeaux, France.

E-mail contact: charlotte.charpentier@aphp.fr

## BACKGROUND

- New anal cancer screening guidelines have recently been proposed in some countries (US, France,...) in at-risk populations such as MSM living with HIV
- These screening programs are based on anal cytology and/or high-risk HPV (hrHPV) detection leading, if positive, to proctologic examination or High Resolution Anuscopy
- In sub-Saharan Africa, there is limited access to anal cytology analysis and proctologic consultations
- The aim of this study was to evaluate anal self-sampling (ASS) for hrHPV detection compared to anal swab carried out by the practitioner (ASP)

## METHODS

- The ANRS 12400 DepIST-H cohort included 200 MSM in Togo, half living with HIV, prospectively followed up with yearly anal sampling and proctologic exam
- During the month-12 visit, ASS was proposed before clinical consultation
- A flyer explaining the procedure accompanied the FloqSwab<sup>®</sup> for ASS (Copan, Italy), discharged into eNAT<sup>®</sup> (Figure 1)

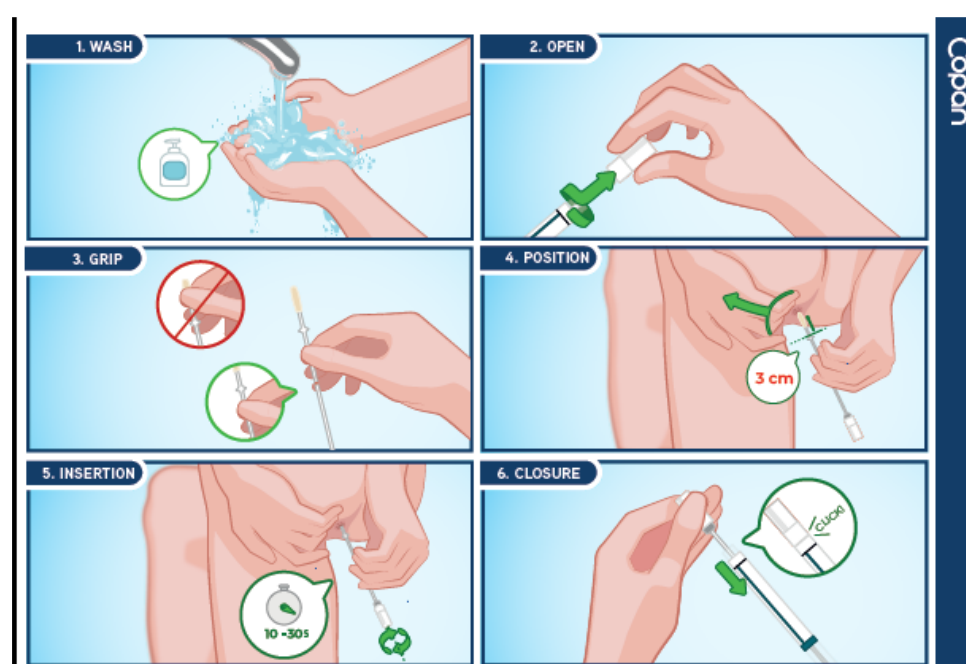


Figure 1. Flyer explaining ASS for the participant

- The practitioner conducted afterwards anal exam and anal sampling with a cytobrush discharged into ThinPrep<sup>®</sup>
- All samples were analyzed by the Virology lab of Bichat Hospital (Paris, France) with Anyplex II<sup>®</sup> for detection of the 14 hrHPV (Seegene, Seoul, South Korea)
- HPV16 viral load was quantified with in-house qPCR

## CONCLUSIONS

- To our knowledge, this is the first time ASS and ASP are carried out concomitantly and compared for HPV detection performance
- The concordance of the two sampling methods, the acceptability of ASS and the facility to implement self-sampling are in favor of using ASS for hrHPV detection in anal cancer screening programs
- ASS could help in reaching the large anal cancer screening target of the recent US recommendations
- In LMIC, the worldwide HPV detection for cervical cancer screening following the WHO's 2020 guidelines will make molecular diagnosis available to implement anal cancer screening

This study, assessing the implementation of anal self-sampling for anal cancer screening in 188 Togolese MSM, showed excellent acceptability with a good performance of hrHPV detection (agreement of 89.7% with results from practitioner sampling). These findings could help to implement anal cancer screening in at-risk populations in LMIC as well as in high-income countries.

## RESULTS

- A total of 188 MSM came to the M12 visit (107 living with HIV), with a median age of 24 years-old
- Almost all participants (99%) found the ASS procedure easy to carry out and 60% of them would prefer ASS to ASP at next visit while 19% would have no preference
- ASS was suitable for hrHPV detection since 6% of ASS samples were uninterpretable compared to 4% for ASP
- Albumin quantification reports a higher cellularity in ASS than ASP with median quantity of 2.9 ng/mL (IQR = 0.5-10.0) vs 0.16 ng/mL (IQR = 0.05-0.33), respectively,  $p < 0.0001$ ; this can be in part explained by a smaller medium volume in which swabs were discharged (1.5 mL for eNAT<sup>®</sup> and 20 mL for ThinPrep<sup>®</sup>)
- At least one hrHPV was detected in 83% ( $n = 147/177$ ) and 76% ( $n = 136/180$ ) of ASS and ASP, respectively
- ASS and ASP showed substantial agreement (89.7%) for hrHPV detection with Kappa's coefficient of 0.66 (Figure 2)
- 28% ( $n = 49/177$ ) and 26% ( $n = 46/180$ ) of ASS and ASP, respectively, were positive for HPV16
- Substantial agreement was also observed for HPV16 (90.3%, Kappa's coefficient = 0.75) (Figure 3)
- HPV16 median viral loads were higher in ASS than ASP (7652 c/mL, IQR = 236-232773 vs 575 c/mL, IQR = 135-7052, respectively,  $p = 0.009$ )
- Regarding the samples with discordant results between ASS and ASP for HPV16 detection, HPV16 viral loads were low: 119 c/mL (IQR = 34-7949) for ASS and 13 c/mL (IQR = 7-114) for ASP in median

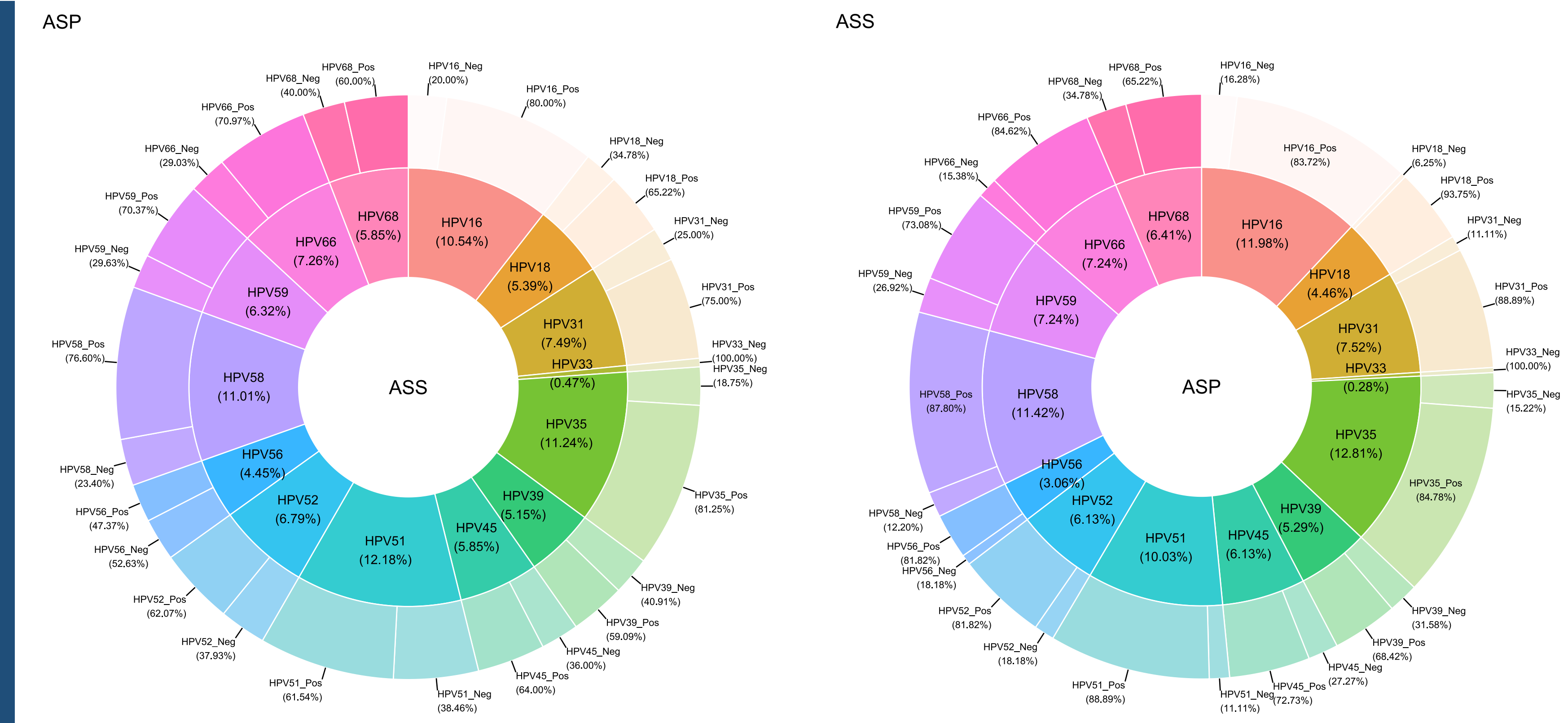


Figure 2. Pie donut plots representing concordance for the 14 hrHPV detection between Anal Self-Sampling (ASS) and Anal Sample done by practitioner with cytobrush (ASP)

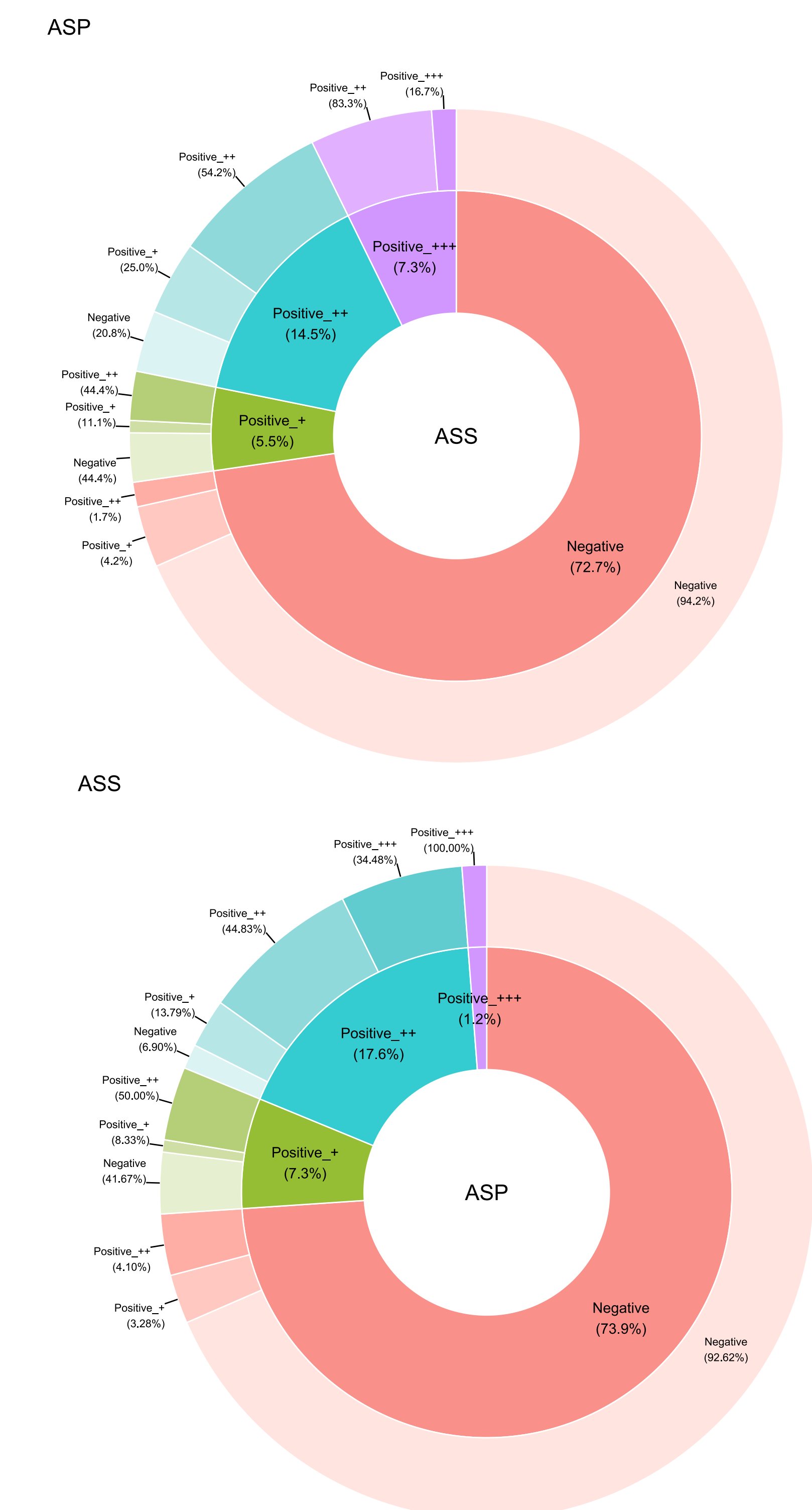


Figure 3. Pie donut plots representing concordance for HPV16 detection with semi-quantitative evaluation (+ = low viral load, ++ intermediate viral load, +++ high viral load) between Anal Self-Sampling (ASS) and Anal Sample done by Practitioner with cytobrush (ASP)