Light microscopy is used as a simple tool to diagnose urogenital gonorrhoea in many resource-limited settings. We aimed to evaluate the accuracy of light microscopy to diagnose urogenital gonorrhoea as compared to a PCR based test.

In 2014, we examined 632 male urethral and 360 endocervical smears in clinic-based and outreach settings in Jakarta, Yogyakarta and Denpasar, Indonesia. Using the detection of Ng DNA by a validated PCR as reference test, we evaluated the accuracy of two light microscopic criteria to diagnose urogenital gonorrhoea in genital smears: 1) the presence of intracellular Gram negative diplococci (IGND) and 2) >20 polymorphonuclear leukocytes (PMNL)/oil-immersion field (oif) in urethral, or >20 PMNL/oif in endocervical smears.

In male urethral smears, IGND testing had a sensitivity, specificity, and kappa of respectively 59.0%, 89.4%, and 0.49. For PMNL count these were respectively 59.0%, 89.4%, and 0.40. The accuracy of IGND in the clinic-based settings (respectively 72.0%, 95.2%, and 0.68) was better than in the outreach settings (respectively 51.2%, 83.4%, and 0.35). In endocervical smears, light microscopy performed poorly regardless of the setting or symptomatology, with kappas ranging from 0.09 to 0.24.

Light microscopy using IGND and PMNL criteria can be an option with moderate accuracy to diagnose urethral gonorrhoea among males in a clinic-based setting. The poor accuracy in detecting endocervical infections indicates an urgent need to implement advanced methods, such as PCR. Further investigations are needed to identify the poor diagnostic outcome in outreach services.

**Conclusion**

Light microscopy by IGND and PMNL criteria is a presumptive treatment for genital infections of human papilloma virus (hrHPV), providing evidence to support HPV vaccination efforts in this region.