

Endosymbiotic partners of *Trichomonas vaginalis*: *Mycoplasma hominis*, TVV, and other potential co-inhabitants

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Background and aims

Trichomonas vaginalis (TV) is the most common non-viral sexually transmitted pathogen worldwide and is known to establish assumedly symbiotic relationships with *Trichomonas vaginalis* virus (TVV) and the bacterium *Mycoplasma hominis*. These „endosymbionts“ have been proposed to modulate the pathogenicity of TV, yet these relationships remain poorly understood. The aim of this study was to characterize TV isolates from Austrian patients with respect to their symbiotic composition and to investigate whether TV can also harbour *Ureaplasma* spp.

Methods

TV isolates were collected at an Outpatients' Centre in Vienna and screened for TVV, *M. hominis* and *Ureaplasma* spp. by PCR. To achieve this, subcultures were installed from the isolates and subjected to RNA, and DNA extraction, respectively. All amplified products were sequenced and compared with reference sequences from GenBank.

Results

Altogether, 82 TV strains were isolated from Austrian patients: 10 isolates derived from men and 72 from women. We confirmed the presence of TVVs (TVV1, TVV2, or TVV3) in 29 of them (35%); no TVV4 was detected. *M. hominis* DNA was found in 28% of the TV isolates by PCR. Preliminary PCR-based results did not reveal the presence of *Ureaplasma* spp. in the tested TV isolates, experiments to infect TV with *Ureaplasma* are currently underway.

Conclusions

Our study provides insight into the symbiotic relationships of Austrian *Trichomonas vaginalis* isolates. Ongoing work will determine whether *Ureaplasma* can persist as an endosymbiont in TV and investigate the impact of endosymbionts on TV pathogenicity.

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