

Prevalence of *Trichomonas vaginalis* infections and the symbiosis with *M. hominis* in STI patients in Vienna

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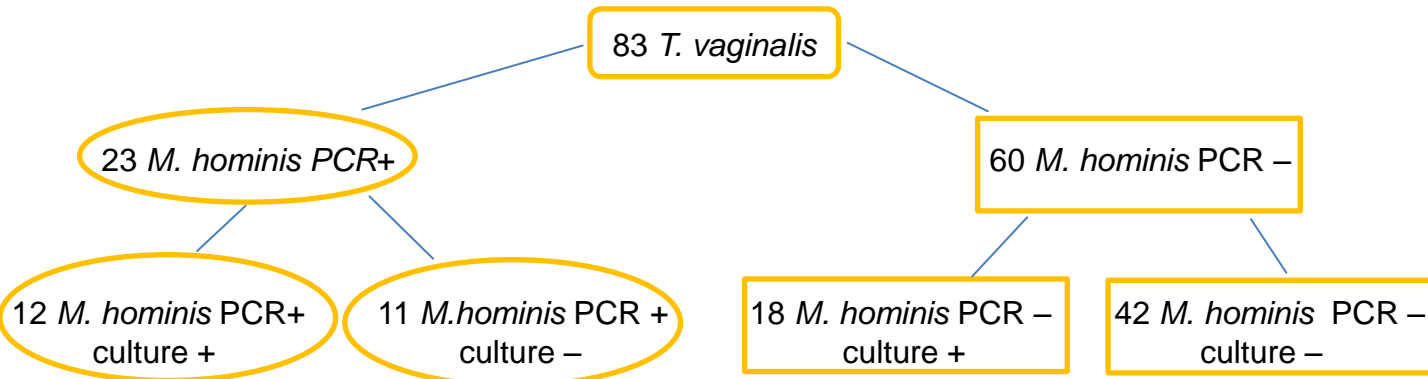
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Background: *Trichomonas vaginalis* is the most frequent non-viral sexually transmitted microbe in the developing world. A symbiosis of *T. vaginalis* with *Mycoplasma hominis* and impacts on pathogenesis are currently discussed. Aim of the study was to update the prevalence of *T. vaginalis* and to investigate the occurrence of symbiotic *M. hominis* for the first time in Austria.

Material and Methods: Genital swabs of patients attending the Outpatients Centre from 2018 to 2020 were tested for *T. vaginalis* by culture and by nucleic acid amplification assay using the Aptima *Trichomonas vaginalis* test (Hologic). *M. hominis* was diagnosed by specific culture plates (Biorad). Cultured *T. vaginalis* were analysed by *Mycoplasma* genus-specific primers and sequenced for the intracellular presence of *M. hominis* at the ISPTM.

Results : Total infection rate with *T. vaginalis* was 0.1% (in men) and 0.4% (in women). From 2019 to 2020 83 patients were diagnosed with *T. vaginalis*. These 83 cultured isolates of *T. vaginalis* were investigated for intracellular *M. hominis* by PCR. The results were then correlated with the diagnosed presence of *M. hominis* by culture from the respective patients. In 30 patients and 23 *T. vaginalis* isolates *M. hominis* was detected by culture and PCR, respectively. These findings did not always overlap, as depicted and described below:



In 23 of 83 cultured *T. vaginalis* isolates (28%), *M. hominis* was detected intracellularly. In 12 of the respective patients (52%; 12/23) *M. hominis* was also detected by culture, thus the patient as well as “their” *T. vaginalis* isolate was tested positive for *M. hominis*. In 48% (11/23) *M. hominis* was exclusively detected inside *T. vaginalis* by PCR, thus these patients were not aware of the presence of *M. hominis*.

60 of 83 cultured *T. vaginalis* isolates (72%) were negative for intracellular *M. hominis*. 18 (30%) of the respective 60 patients were diagnosed positive for *M. hominis* by culture, leading to the assumption that these *M. hominis* were extracellular, as “their” *T. vaginalis* isolates were negative for *M. hominis*. 42 of 60 patients (70%) were negative for *M. hominis* by culture, the respective *T. vaginalis* isolates were also negative for *M. hominis* by PCR.

Conclusion: The prevalence of *T. vaginalis* was low in the examined individuals. Our data indicate that infections with *M. hominis* may occur more frequently, since *M. hominis* can hide inside *T. vaginalis* and remain undetected by culture methods.