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TITLE

IMPACT OF CANDIDIASIS ON HUMAN INFERTILITY

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ABSTRACT

Few studies have investigated prevalence of *Candida* species in an asymptomatic cohort of both men and women, and the impact on infertility. Vaginal candidiasis affects 75% of all women at least once during their life. Recent studies show that *Candida* influences spermatozoa quality suggesting an impact on infertility. This study characterised *Candida* colonisation in fertile and infertile couples in the oral cavity (saliva) and reproductive tract (semen or vaginal swab). *Candida* prevalence and diversity from the oral and female/male reproductive tracts of 20 couples (40 individuals) were determined by genetic amplification and pyrosequencing were used to identify *Candida* species. Multilocus sequence typing analysis was used to assign sequence type among the culturable *C. albicans* isolates. *Candida* species were present in the oral samples of 93% of the women, however only 43% of men were colonised. *C. albicans* accounted for 73% and 57 % in women's and men's oral samples, respectively. Interestingly, shared species were observed in oral samples of only three couples. *Candida* colonisation in semen was lower 6%, in comparison with 37% in vaginal samples. *C. albicans* (66.6%) was the predominant species in the vaginal samples, unlike oral samples, reproductive samples were colonised only with *C. albicans*, *C. guilliermondii* and *C. parapsilosis*. Only one couple of the 16 studied shared *Candida albicans* across all body sites. However, genetic analysis identified a greater intra-species diversity in oral and reproductive tract isolates. These findings suggest a higher diversity of *Candida* in oral but not the reproductive tract isolates. In vitro fungal metabolic products reduced 50% and 70% of the spermatozoa motility after 2 and 24 hours culture with spermatozoa, respectively. Clinical implications and impact of asymptomatic candidiasis on fertility will be discussed.

INSTITUTE

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