

Microbial Infection of Male System causing Infertility

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Introduction

Nowdays, about 10-15% of the couples within childbearing age suffer from infertility [1, 2]. In these infertile couples, about 50% related to male factor infertility. Male reproductive health is becoming a social issue; more and more scientists focus their studies on male subfertility or infertility [3]. Male fertility depends on normal spermatogenesis, which consists of three phases: self-renewal of spermatogonial stem cells and differentiation, meiotic division of spermatocytes, and spermiogenesis.

Spermatogenic cells are highly sensitive to environmental factors; abnormal spermatogenesis affected by deleterious factors may result in subfertility or infertility [4]. In the past decades, studies had reported that environmental factors are associated with spermatogenesis [5], these factors not only includes physical and chemical factors, but also includes microorganism infectious of the male system [6]. In the clinical, some pathogens, such as *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Mycoplasma genitalium*, *Trichomonas vaginalis*, Herpes virus simplex, are highly related to male infertility [7, 8]. Studies showed that about 15% of male fertility disorders are results from infectious and inflammation of male system [9]. The inflammatory microenvironment results from microorganism's infection may induce abnormal spermatogenesis leading to infertility [10, 11]. For example, *C. trachomatis* is one of the most common pathogens that cause sexually transmitted infections; nearly 50% of men who are infected with this organism develop asymptomatic infections [12]. Study showed Chlamydia infections may indirectly damage the sperm, leading to unqualified sperm parameters, DNA fragmentation and impair the acrosome reaction capacity [13]. Using the male C57BL/6 mice, experiments confirmed that *Chlamydia muridarum* infection disrupted seminiferous tubules, causing loss of germ cells, with the most severely affected tubules containing only Sertoli cells [14]. Herpes Simplex Virus, reduces populations of germ cells, affects mobility and morphology of spermatozoa [2]. Other pathogens, such as *Ureaplasma* spp., human papillomavirus, hepatitis B and hepatitis C viruses, have all been detected in semen from symptomatic and asymptomatic men, are associated with poor sperm quality and decreased sperm concentration and motility [15, 16].

All these literatures indicated that studies about clinical microbiol infection will cast a light on the diagnosis and treatment of male infertility. As the male infertility is one of the most important social problems, the launch of this new journal 'Advance techniques in Clinical Microbiology' is of great significance in nowadays!

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