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Poster Presentations

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The effect of different O-antigen serogroups of Escherichia coli on infertility in semen samples of fertile and infertile men

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Background: Male genital tract infections have been associated with infertility. Among the types of bacteria, Escherichia coli (*E. coli*) has drawn increasing attentions. However, its role in male infertility remains undefined.

Objective: This investigation aimed to characterize and compare the distributions of O-antigen serogroups of E. coli in the semen samples of fertile and infertile men.

Materials and Methods: In this case control study, semen samples were collected from 575 fertile and 1725 infertile men. The *E. coli-positive* samples were evaluated in term of concentration, morphology,

viability and motility parameters according to World Health Organization 2010 guidelines. Finally, different serogroups of E. coli were identified by multiplex polymerase chain reaction targeting the Oantigen variations of the bacterium.

Results: The prevalence of *E. coli* among fertile men was significantly higher than infertile men (p < 0.0001). The sperm morphology, viability and motility, in the *E. coli-positive* fertile group was significantly higher than in the E. coli-positive infertile group (p < 0.0001). The E. coli O6 was the most prevalent serogroup found in both groups. However, there was no significant difference in frequencies of different serogroups of *E. coil* between two groups (p = 0.55).

Conclusion: Despite the higher prevalence of *E. coli* among fertile men, the E. coli have more detrimental effect on semen parameters in infertile men. There was no association between the types of E. coli serogroups between two groups.

Key words: Male infertility, Semen, Escherichia coli, Serogrouping.