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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 O-antigen 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. coli* 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.