Letter to the Editor

Factors affecting flowering of *Pseudomonas aeruginosa* in urine

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Osmolarity is another important factor which has been reported to affect growth and virulence of *P. aeruginosa*. In order to establish and cause UTI, *P. aeruginosa* has to adapt itself to variations in osmolarity of urine. There was significant increase in production of virulence factors with increase in osmolarity. However further increase in osmolarity led to significant decrease in production of virulence factors. In addition, organisms grown in medium having osmolarity 300 mOsm/L were resistant to phagocytosis and were more virulent in mouse model of ascending UTI as indicated by significantly higher neutrophil recruitment, bacterial load, malondialdehyde (MDA) production, a marker of tissue damage, and renal as well as bladder pathology [8-9].

In addition to environmental variables, the host plays a critical role in the initiation of an infectious process. As evidenced by the increased pathogenicity of microorganisms in immune-compromised hosts and the absence of pathogenicity of pathogens in immune-competent hosts, microbial virulence is reliant on host characteristics. Innate immunity serves as a first line of defense in this regard, with macrophages and neutrophils playing a key role. Macrophages, which are mostly derived from the bloodstream, are one of the first lines of defense in the urinary tract and provide resistance to infection [7].

In conclusion: Although many factors can influence flowering the *P. aeruginosa* in urinary tract; environmental and host related factors, *P. aeruginosa* showed high adaptation to change in these factors by various mechanisms that enhance its pathogenicity and antibiotic resistance rate. The researchers in the field of antimicrobial agent may...
give more attention by highlight \textit{P. aeruginosa} as a major health threat and strongly urged the research and development of alternate and new antimicrobial therapies due to the high rates of antibiotic resistance.

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\textbf{References}


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