Detection of the presence of pathogenic bacteria from Dental waterline systems

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INTRODUCTION
Water from dental unit waterlines (DUW/Ls) may be a potential source of infection for both dental health care personnel and patients. During dental treatment, both patient and personnel are exposed to droplets and biofilm containing microorganisms. Potential health risks are represented by the presence of pathogenic bacteria. The presence of endotoxin (lipopolysaccharide) in contaminated water is also a threat. Ensuring water safety is crucial for dental clinics.

MATERIALS AND METHODS
The study was carried out during 4 May to 6 December 2017. A total of 432 samples of DUW/Ls (Fig. 1) were collected from different types of DUW/Ls in small dental clinics. The experiments were performed at the laboratories of the Prince Sultan National Military Medical City in Saudi Arabia. The samples were collected in sterile containers using high-speed drill pieces, 1 ml of water dental- mouthwash (SOLWAS) and water mains tap water (SOL) on each of the dental units. In addition to the source of tap water in the dental clinic as a control, samples were then transferred immediately to the lab for sample processing.

RESULT
Enumeration of the bacteria in DUW/Ls samples
Average of Contamination level for each flushing time interval from different types of DUW/Ls samples (CFU/ml) from building A before and after work.

CUNCISION
The results of this study demonstrated that the highest percentage of pathogenic bacteria in DUW/Ls in Saudi Arabia was also associated with different patterns of antibiotic resistance, suggesting that the possible cause for biofilm formation inside the inner walls of the tube and for the bacteria releasing endotoxin.

REFERENCES

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