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Microbial evaluation of dental units waterlines at the department of operative dentistry, Tehran university of medical sciences in the year 2006

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### Abstract:

**Background and Aim:** According to infection possibility in high risk patients, assessment of microbial contamination in water sources utilized at medico-dental units has become a recent concern. The purpose of this study was to evaluate the microbial contamination in dental units waterlines at the department of operative dentistry, Tehran university of medical sciences in the year 2006.

**Materials and Methods:** In this cross-sectional study, six dental units in the department of operative dentistry were selected to assess microbial contamination in water sources. Samples were taken on Saturdays (the first working day in a week) and in the midweek, 64 and 16 hours respectively after turning the units off. Moreover, for investigating the effect of flushing, sampling was done at 30, 60, 90 and 120 seconds after flushing and were taken from three parts of each unit including air/water syringe, turbine handpiece and also cup filler water. Samples were transported in closed sterile containers to microbiology laboratory of the school pharmacy. Data were analyzed by Kruskal-Wallis and Dunn tests with  $p < 0.05$  as the level of significance.

**Results:** E.coli was isolated from contaminated samples. Contamination decreased by flushing. In midweek after 90 seconds flushing, water contamination disappeared. On Saturdays 2 minutes flushing decreased contamination to lower than 200 cfu/ml (the rate recommended by ADA). Samples taken from turbine handpieces showed significantly higher contamination rate compared to air/water syringe and cup filler water ( $p < 0.001$ ).

**Conclusion:** According to the results of this study, dental units waterlines showed bacterial contamination which was eliminated after 120 seconds of flushing.

### Keywords:

Dental unit waterline . Turbine handpiece . Air/water syringe . CFU

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