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Spectrum of antibiotic sensitivity of bacterial flora isolated from dental laboratory surfaces at a private dental hospital in Lahore

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ABSTRACT

Background and Objective: Dental laboratory surfaces are contaminated by various microorganisms that can cause infections among staff and students. This observational study aimed to identify different types of microbial flora present on different surfaces of dental laboratories and determine the antibiotic sensitivity of the isolates.

Methods: This cross-sectional observational study was conducted in the dental laboratory of a dental school in Pakistan from April 2023 to April 2024. Eleven samples were collected from randomly selected surface areas in the dental laboratory during working hours of the day without any prior disinfection using Amies agar gel transport swabs and transferred to the laboratory for culture and sensitivity testing. Visible growth was observed on all culture plates. Colonies grown on blood and MacConkey agar plates were tested using standard microbiological methods.

Results: Analysis of swabs taken from the dental laboratory surfaces showed microbial contamination with *Acinetobacter baumannii* (63%), *Klebsiella pneumoniae* (36%), and *Staphylococcus hominis* (27%), with the absence of any fungal growth. These microorganisms showed variable resistance to various antibiotics, including Ampicillin, Co-amoxiclav, Co-trimoxazole, Meropenem, Ciprofloxacin, Cefotaxime, and Levofloxacin.

Conclusion: This study found pathogenic microorganisms resistant to most antibiotics, highlighting the need to update disinfection practices commonly used in our dental laboratories.

Keywords: *Acinetobacter baumannii*, antibiotic, antimicrobial resistance, dental laboratory.

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