

SENSITIVITY PATTERN AND CORRELATION OF ORGANISMS ISOLATED FROM THE HANDS AND MOBILE PHONES OF PERSONS IN HEALTHCARE SETUP

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ABSTRACT

Introduction: The human skin hosts a wide variety of microorganisms which have important effects on health, with a typical hand surface harboring more than 150 bacterial phylotypes. The hospital environment serves as a reservoir for nosocomial pathogens as these pathogens can survive on environmental surfaces for months. Thus, the hands as well as the skin and clothing of the hospital staff are at an undue risk of contamination. When mobile phones are used, they have direct contact with the human skin and thereby exposure to both the normal flora and pathogenic organisms on the hands. This contamination can serve as the source of pathogens on mobile phones, leading to the prevalence of hospital acquired infections. Nosocomial infections affect 1 in 10 patients admitted to hospitals which are caused by multi drug resistant organisms due to the repeated and improper use of antibiotics.

Aim: This study is being carried out to correlate and study the sensitivity patterns of the organisms isolated from the hands and mobile phones of persons in the healthcare setup.

Materials and Methods: Samples were collected from the hands and mobile phones of 204 healthcare workers working at Punjab Institute of Medical Sciences, Jalandhar over a period of 2 months. The subcultures were streaked onto Blood Agar and MacConkey Agar plates. These plates were incubated aerobically at 37°C for 48 hours. The plates were observed for growth and organism was identified by noting the colony character, Gram's staining and biochemical reactions. The isolated organisms were screened for sensitivity to various antibiotics.

Results: From the samples of the 204 individuals, 313 organisms were obtained. Of these, 113 organisms were isolated from mobile phones, 166 organisms were isolated from the hands and contamination was obtained in 34 cases. The growth of one type of organism (51) was obtained on the hands and mobile phones of 51 (25%) subjects. In 22 (11%) cases, individual organisms were isolated from the mobile phones but there was no growth from the corresponding hands. Fifty six (75%) *Staphylococcus aureus* isolated were resistant to Cefoxitin. Hundred (71%) Coagulase negative *Staphylococci* isolated from hands and mobile phones were Cefoxitin resistant. Out of the 62 Gram-negative organisms isolated from the hands of the subjects, 52 (84%) were multiple-drug resistant.

Conclusion: There is a transfer of organisms between the hands and mobile phones. The isolation of multi-drug resistant organisms from both the hands and mobile phones is a cause of serious concern as the treatment of a disease caused by such organisms will be recalcitrant. Therefore, it is strongly suggested that the use of mobile phones in the healthcare setup, especially in the sensitive areas such as wards should be reconsidered. Healthcare workers are also advised to regularly wash their hands after using mobile phones to prevent transmission of diseases.

KEYWORDS: Hands, Mobile Phones, Organisms, Sensitivity