

Isolation of microorganisms from mobile devices of healthcare workers and the association of these microorganisms with real-time nosocomial infections in ICU patients at tertiary care hospital, Rajasthan.: Reg No: 317

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ABSTRACT

Introduction: Nosocomial infections, also known as Hospital-acquired infections (HAIs) pose major public health concerns, contributing to increased patient illness, death rates, and healthcare expenses. Mobile phones, which are widely used by healthcare professionals, may serve as carriers for harmful microorganisms. This study explores the potential of mobile phones to harbour pathogens and examine their possible association to the spread of nosocomial infections. **Objectives:** To isolate and identify microorganisms from health-care worker's mobile devices, to evaluate the incidence of nosocomial infections in ICU patients and to determine any association between isolated microorganisms from mobile devices and patient infections. **Methods:** A study was conducted in ICU of tertiary care hospital. Mobile devices from HCWs were swabbed and cultured. Organisms were identified via microscopy and MALDI-TOF MS. Simultaneously, ICU patients admitted for over 48 hours were monitored for HAIs based on CDC criteria. Clinical samples were collected for microbiological analysis, and isolates from devices and patients were compared. **Results:** Among 177 ICU patients, 42 (23.7%) developed HAIs, predominantly VAP (27%), followed by HAP (18.6%), CRBSIs, and CAUTIs. Common pathogens included *Acinetobacter baumannii*, *Escherichia coli* and *Klebsiella pneumoniae*. Of 62 mobile devices analysed, skin and environmental flora were most frequently isolated. No significant association was found between device contamination and patient infections. **Conclusion:** Although microbial contamination of mobile devices was common, no direct link to nosocomial infections was established. The findings emphasize the importance of continuous surveillance, and education of healthcare personnel to mitigate the risk of HAIs in intensive care settings.

KEYWORDS

Nosocomial infection, Hospital acquired infections, Mobile phones, CRBSI, CAUTI