

Hygiene Study: Reusable vacuum system electrodes for resting ECG

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Hospital: University Hospital Kreiskrankenhaus, Lörrach, Germany

Aim: Reusable medical devices, such as electrodes, are potential vehicles for cross-contamination representing a risk of nosocomial infections. The aim of this study was to investigate if reusable vacuum system ECG electrodes may act as carriers of microorganisms following consecutive ECG examinations and routine cleaning methods.

Summary:

Microbiological samples were taken from vacuum ECG electrodes used for patients that were referred to resting ECG examinations. After various numbers of patient contacts, the microbiological contamination was examined using blood agar plates/ dermatophyte plates. Throughout a period of 4 weeks, microbiological samples were taken from a total of 95 vacuum ECG electrodes.

This study demonstrated the presence of microorganisms on the reusable vacuum system ECG electrodes. The number of microorganisms increased after successive use of the re-usable ECG electrodes. Cleaning and preparation of the electrodes according to the manufacturer's instructions were not sufficient to remove all the microorganisms.

Two pathogenic fungi and several non-pathogenic bacteria were identified. For most patients the presence of these microorganisms is not critical, but it may pose a risk to some patients, such as immuno-compromised patients or patients with post-operative wounds in the chest area.