Mobile phones in hospitals: Are they a source of nosocomial infection?

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Introduction

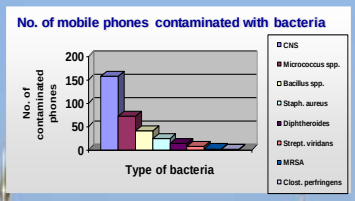
Nowadays Mobile phones are widely available in our hospitals and part of life for doctors, nurses, medical students and other hospital workers. They may act as a potential source of nosocomial infections.

Objective of the study

It was to determine if mobile phones of health workers were contaminated with pathogens and act as a vehicle of disease transmission in hospitals

Material and methods

A total of 193 mobile phones of health workers in large hospitals in Cairo and Al-Madinah were swabbed with cellophane papers, adhesive tapes and cotton moistened swabs. The personals included in the study were brought their mobile phones to the hospital every day, at least for 3 working days and used their phones at hospital at least twice every day. The cellophane papers and adhesive tape swabs were examined microscopically for ova and parasites. The cotton swabs were inoculated onto trypticase soy agar with 5% sheep blood and brain heart infusion agar, incubated at 37$_0$C for 48 hours and examined for colony growth at 24 and 48 hours. Mobiles were cleaned with alcohol swabs and sterile water after the first culture was taken, and recultured immediately afterward to document decontamination. All microorganisms were identified by standard laboratory methods.



Results

Parasites were discovered by cellophane paper examination in 7% of phones swabbed: *Giardia lamblia* cysts 4%; *Entamoeba histolytica* cysts 2% and *Entrobius vermicularis* ova 1%, all of them from pediatric wards. In total, 188 cultures were positive for at least one pathogenic microorganism of sampled phones; : coagulase-negative *Staphylococcus* 82%; *Micrococcus* spp. 37%; *Bacillus* spp. 21%; *Staphylococcus aureus* 12%; Diphtheroids 7%; *Streptococcus viridans* 4%; MRSA 1% and other gram negative organisms. There was no significant difference between phone types or clam shells. The use of alcohol disinfectant wipes reduced the contamination of mobile phones by 95%.

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Discussion & Conclusion

This is the first published study to address the incidence of parasitic contamination of mobile phones. This study demonstrates a high rate of mobile phone contamination by parasites (14%) and bacteria (13%) known to cause nosocomial infection. The phones was contaminated by many bacteria especially skin bacteria. This could be due to the fact that this type of bacteria increase in high temperatures and our phones are perfect for breeding these germs as they are constantly handled, kept warm in pockets, handbags and briefcases, in addition to the heat generated by the phones creates a breeding ground for all sorts of bacteria that are normally found on our skin. There was no significant difference ($P<0.05$) in the incidence of specific types of bacterial growth isolated on doctors' or nurses' phones, other health workers, the type of phone they owned (i.e. flip-top/clam shell or sliding cover design), or whether or not they brought their phone to work every day.