Control of bactrial contanination of nursery incubators and operating rooms.

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Samples were collected from nursery incubators and operating rooms of Zagazig University Hospitals the bacterial isolates were Klebsiella spp, Pseudomonas spp, E.coil, Proteus spp, and Staphylococcus aureus .Bacterial isolates were the most common in hospitals , so the antibacterial effects of antibiotics, essential oils , combination between antibiotics and essential oils and effect of radiations were studied on these bacterial. The most effective antibiotics against bacterial isolates were impinem, gentamicin and ciprofloxacin for Gram negative bacteria and impinem, ofloxacin and erythromycin for Gram positive bacteria.The effect of essential oils on bacterial isolates show that thyme and rosemary inhibit the growth of Grams negative bacteria, caraway oil have no effect on Pseudomonas spp and have weak effect on another Grams negative bacteria where chamomile have not any effect on Gram negative of bacterial isolates. The effect of essential oils show that thyme , cloves, pepper, rosemary and chamomile inhibit growth of S. aureus while caraway, garlic, lemon, jasmine and anise have low effect on S. aureus. Combination between essential oils (thyme, rosemary, clove, chamomile) and antibiotics ciprofloxacin, impinem and ofloxacin. The results showed that combination between this antibiotics and essential oils gave synergetic effect against different isolates more than antibiotics alone.Ultraviolet rays had high effect on various bacterial isolates when it exposed to ultraviolet rays for 9 to 12 minutes. Increasing of gamma irradiation doses decreased the total number of viable cells, The results of present study showed that 3 and 4 KGy completely destroy viable cells of E.coli and Proteus spp while viable cells of pseudomonas spp completely destroyed at 4 and 5 KGy. X rays have antibacterial activity causing population reduction of tested bacteria. It was proved that lethal dose differ against different bacteria , the lethal dose for E.coli, Proteus spp and Pseudomonas spp were 3.5,4,4.5 kGy .Effect of both thyme and jasmine oils on ultrastrcture of Pseudomonas spp using Transmission Electron Microscope (TEM) showed that thyme oil cause damage to cell wall and damage for cytoplasmic membrane while jasmine had no effect on ultrastructure of Pseudomonas spp.