

Abstract

Microbiological assessment of the effectiveness of the current decolonization procedure using rotational antiseptics among burn patients admitted to the National Hospital of Sri Lanka

Introduction:

Knowledge of common microorganisms and their antibiograms is important in managing burn wound infection in hospitalized burn patients. Decolonization procedure using rotational antiseptics is thought to be effective in preventing burn wound infection.

Objectives:

This study was designed to assess the effectiveness of the decolonization procedure using rotational antiseptics and to identify microorganisms that infect/colonize burn wounds and their antibiograms and factors associated with colonization/infection of burn wounds.

Methodology:

A cross sectional study was carried out at the Burns Unit of the National Hospital of Sri Lanka from December 2016 to March 2017. Thirty two patients were recruited using convenience sampling excluding those managed in other centres, underwent skin excision and grafting, had been on parenteral antibiotics and in whom other antiseptics were used. When burn wound infection/colonization was evident clinically, wound swabs were collected and antiseptic cycles were started. One cycle comprised of 3 pre-determined antiseptics namely acetic acid, Milton and povidone iodine. Swabs were collected after completion of each cycle until clearance of organism from the site. All swabs were processed according to standard operating procedures.

Results:

From 148 swabs which were obtained from 51 sites of 32 eligible patients, 58 organisms were isolated. *Pseudomonas* spp. was the commonest (31.05%) followed by equal number of *Staphylococcus* spp, coliforms and *Acinetobacter* spp. *Pseudomonas* spp and coliforms were sensitive to first line antibiotics. Antibiotic resistance was high among *Acinetobacter*

and *Staphylococcus*. *Pseudomonas* spp needed 3 cycles of decolonization to clear while other 3 species needed 2 cycles. Due to the small sample size and the selected population, factors associated with colonization/infection of burn wounds were not ascertained.

Conclusions:

Pseudomonas, *Staphylococcus*, coliforms and *Acinetobacter* species were common in burn patients of this setting. Wound swabs can be repeated after completion of 2 or 3 cycles of rotational antiseptics according to the organism rather than routinely obtaining swabs after each antiseptic cycle. To describe factors associated with burn wound infection, separate study design is needed.