

## BACTERIOLOGY OF WOUNDS OF LOWER EXTREMITIES AND THEIR EFFECT ON THE WOUND HEALING

Waldemar L. Olszewski<sup>1</sup>, Bozenna Interewicz<sup>2</sup>, Zdzislaw Machowski<sup>2</sup>, Oleg Matsevych<sup>2</sup>, Ewa Stelmach<sup>1</sup>

<sup>1</sup>*Dept. of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland,* <sup>2</sup>*Dept. of Surgery, University of Limpopo, Polokwane Mankweng Hospital Complex University of Limpopo, Polokwane, South Africa*

Chronic ulceration of lower extremities is a frequent condition, with a prevalence of 3–5% in the population over 65 years of age. There are major differences between the European, Asian and African countries with respect to skin infections. The question arises whether different bacteria flora brings about different clinical course of wound healing.

**Aim:** To investigate the phenotypes and antibiotic resistance of residual microflora on skin of legs of healthy individuals and patients with nonhealing wounds of lower extremities in Africa, India and Europe.

**Material and methods:** Samples from skin and wound were taken from 20 healthy individuals and 30 patients in each of the investigated regions. Identification of microorganisms and its antibiotic resistance were performed with standard microbiological methods. Resistance scale was 0 to 2 (0-no, 1-intermediate, 2-full resistance)

**Results:** In African population *Enterococcus faecalis* was most frequent on skin of both healthy individuals and patients. This strain also dominated in wounds. The highest resistance of *Enterococcus faecalis* was observed to erythromycin, tetracyclines, rifampicin, ciprofloxacin, gentamicin, streptomycin and quinopristine-dalfo. The detected strains of *Pseudomonas aeruginosa* were resistant to penicillins and cephalosporins. In the Indian population, the most common microorganism was *Bacillus cereus*. In Europe dominated *Staphylococcus epidermidis* and *aureus*.

**Conclusions:** Bacterial flora infecting limbs of patients of the African community is different from that in other regions of the world. Interestingly, the clinical course of wound (ulcer) healing did not differ. This suggests that wound infection is a secondary factor superimposed upon primary causative factors predisposing tissues for non-healing.