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Antimicrobial treatment of the diabetic foot

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Background: Infections of the foot are the most frequent problems in patients with diabetes. Severe evolution of the inflammatory process is influenced by the type of microorganism, grade of metabolic impairment, diabetic neuropathy, micro- and macrovascular lesions. **Objectives:** Evaluation of the antimicrobial therapy of the infected diabetic foot by a retrospective analysis of 97 patients (control group), treated during the period 2003- 2005, and a prospective analysis of 38 patients (study group) treated during the period 2010-2011 in the departments of general surgery and septic intensive care unit of the Clinical Republican Hospital. **Materials and Methods:** At admission, swabs from wound areas were collected in all patients. Initial antibiotic therapy was empiric prior the pathogen identification. Afterwards the treatment was selected in accordance to culture test performed weekly. **Results:** In the control group, the microbial flora consisted of microbial associations. The analysis of the cultures revealed low sensitivity (31%) of the microbial flora to first generation antibiotics (benzylpenicillin, streptomycin, tetracycline). Only 32-46% of the cultures were sensitive to semisynthetic penicillins. Sensitivity to gentamicin was revealed in 54%, but to ciprofloxacin and cephalosporins of I-II generation - up to 95%. First antibacterial treatment was empirical, usually cefazolin alone (up to 4 g / 24hr IV). In case of purulent-necrotic processes and the presence of clinical data for presence of anaerobic inflammation the following scheme of treatment was used: metronidazole (1.0 g / 24hr IV) in combination with cephazolin (up to 4 g / 24hr IV). Further analysis of results of the bacteriological examination and the clinical data in 71% cases confirmed the accuracy of empirical selection of antibacterial treatment. Analysis of the primary culture tests in control group shows monomicrobial infection in 16/38 (42%) cases and microbial association in 22/38 (58%) cases. Monomicrobial infection was produced in 12 cases by Staph. Aureus, which was sensitive to oxacillin in 5 (42%) cases and resistant in 7 (58%) cases. Enterococcus faecalis resistant to cephalosporins and rifampicin was detected in 2 patients. This agent was sensitive to ampicillin, amoxicillin, ofloxacin, doxycycline, levofloxacin, ciprofloxacin, moxifloxacin, vancomycin, imipenem, meropenem. Polymicrobial infections were represented by gram-negative and gram-positive associations in 15 (68%) cases, only gram-negative bacteria in 6 (27%) patients and pure gram-positive association in one case (5%). **Conclusion:** 1. Diabetic foot infections are produced by variable pathogens. Patients referred from other hospitals present polymicrobial infection in contrast to patients at first admission who demonstrate monomicrobial culture. 2. The data demonstrates the increasing incidence of resistant Methicillin/Oxacillin-resistant Staphylococcus aureus in diabetic foot infections in Moldova.