

Abstract

Analysis of antibiotic prophylaxis in patients with osteosynthesis of the proximal femur

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Introduction and aims: This work is part of the continuous monitoring of antibiotic prophylaxis (AP) at the Department of Traumatology, University Hospital. The aim was to analyze and compare key parameters of AP in osteosynthesis of pertrochanteric fractures with the previous investigation and the methodological guidelines of the University Hospital.

Methods: This retrospective cross-sectional study took place from 1st April 2019 to 31st March 2020 at the Department of Traumatology at the University Hospital. AP was analyzed in 50 patients above 18 years of age and who underwent a pertrochanteric fracture of the proximal femur. Data was collected with a form, prepared in cooperation with the Department of Medical Microbiology, physicians and clinical pharmacists of the University Hospital. Information on the patient, surgery, indication of AP, selected antibiotic/chemotherapeutic (ATB) and its dose, time, route of administration, as well as the size, number and interval of administered postoperative doses and postoperative complications were collected. The data were analyzed in the context of the hospital's methodological guideline and compared with the survey conducted in 2016. The data were analyzed with descriptive statistics and Fisher's exact test ($p < 0.05$).

Results: The mean age of the patients was 79.2 years. The average weight was 67.9 kg and the average BMI was 24.3. Diabetes mellitus (DM) was found in 11 (22,0 %) patients, nicotine in 2 patients (4,0 %) and ongoing infection in 2 patients (4,0 %). AP was indicated to all patients. In 86% of cases, cefazoline was given as preoperative ATB, clindamycin was chosen in 8,0 %, and amoxicillin-clavulanate was chosen in 6% of cases. AP was continued after a surgical procedure in 14 patients (28,0 %). The choice of ATB for AP and dose was in 88,0 % of cases identical to the hospital guideline. The timing of AP was in the optimal time interval in 56,0 % of cases. In 96,0 % of cases, ATB administration was discontinued within 24 hours after surgery. An increase in adherence to the hospital guidelines was noted in study parameters.

Conclusion: The results indicated that due to the performed interventions, the AP in the given department performs statistically significantly more often following the valid recommendations. The day-to-day provision of clinical and pharmaceutical care, in particular, played a key role.

Keywords: antibiotic prophylaxis, proximal femur fracture, osteosynthesis.