

Session: P096 Central-venous catheter infections

Category: 8d. Nosocomial infection surveillance & epidemiology

25 April 2017, 12:30 - 13:30
P2007

Infections in patients on short-term haemodialysis with catheters: incidence, associated factors and microbiological aspects

Mayra Meneguetti¹, Natalia Bertoni², Fernando Bellissimo-Rodrigues^{*3}, Elen Romao⁴

¹*Hospital Das Clínicas Faculdade de Medicina Ribeirão Preto; Infection Control Service*

²*Hospital Das Clínicas Da Faculdade de Medicina de Ribeirão Preto*

³*Ribeirão Preto Medical School, University of São Paulo ; Social Medicine*

⁴*Faculdade de Medicina de Ribeirão Preto Da Universidade de São Paulo*

Background: Bloodstream infection (BSI) is the second most common cause of death among patients on hemodialysis. To evaluate the incidence and possible risk factors of catheter-related infections in patients undergoing dialysis treatment and to identify and characterize based on sensitivity profile, the primary microorganisms isolated during 1 year follow-up.

Material/methods: A prospective cohort study was conducted in 2014 in the hemodialysis reference center. We included 200 outpatients with chronic renal disease or acute kidney injury, without permanent venous access. A nurse assessed the presence of infection signs three times per week during dressing changes. The Student's t-test or Mann–Whitney U-test (univariate analysis) was used. For categorical variables, the chisquare test or Fisher's exact test was used.

Results: A total of 55 infection episodes related to hemodialysis catheters were noted in 43 (22%) patients. Of these, 38 (69%) were BSI and 17 (31%) were local infections. Thirty-two patients (75%) had a femoral access. In total, 6,240 hemodialysis sessions were performed, and the rate of primary BSI and local infection was 6.1 episodes and 2.7 episodes per 1,000 patients on daily dialysis, respectively. In a univariate analysis, diabetes was significantly associated with the development of infection, while the level of education, race, age, and sex were not significantly associated. The results indicate that the main agents isolated were the gram negative microorganisms (55%), half of the samples were resistant to carbapenem and one sample was resistant to polymyxin B. The gram-positive microorganisms were the second most prevalent group, and *Staphylococcus aureus* was the most frequent agent isolated (36%). The primary results regarding the microorganisms identified and the sensitivity profile are shown in Table 1.

Conclusions: We identified a high incidence of catheter-related infections in patients with acute kidney injury, particularly compared to those with chronic renal disease. The occurrence of infections caused by resistant gram-negative bacteria is noteworthy. The only risk factor identified for the occurrence of these infections was diabetes mellitus as comorbidity. It is necessary to improve the care of these devices.

Table 1. Microorganisms identified in blood cultures collected from patients who had bloodstream infections with laboratory confirmation during one year of follow-up. Ribeirão Preto, São Paulo, Brazil, 2014.

Microorganisms	Total of positive blood cultures (N = 36)
<i>Klebsiella pneumoniae</i> , <i>Pseudomonas aeruginosa</i> , <i>Acinetobacter baumannii</i> SC	8
<i>Klebsiella pneumoniae</i> , <i>Pseudomonas aeruginosa</i> , <i>Acinetobacter baumannii</i> RC	9
<i>Klebsiella pneumoniae</i> , <i>Pseudomonas aeruginosa</i> , <i>Acinetobacter baumannii</i> R	1
<i>Staphylococcus sp.</i> *	6
<i>Staphylococcus sp.</i> &	10
<i>Candida albicans</i> sensitive to fluconazole @	1

SC: sensitivity to carbapenem; **RC:** resistance to carbapenem; **R:** resistance to polymyxin;

*: sensitivity to vancomycin; **&:** vancomycin resistance; **#** sensitivity to oxacillin; **@** resistance to oxacillin.