Abstract:

Recent reports have shown an increase in the rate of Gram-negative bacteremia in several settings, including catheter-related bloodstream infections (CRBSI). To analyze if the epidemiology of CRBSI is also changing in hemodialysis patients, we revisited the etiology of CRBSIs in our renal unit over 8 years. During the observed periods, 149 episodes of CRBSIs were reported and the CRBSI incidence rate, ranged between 0.67 and 0.82 episodes/1000 tCVC days. Of these 149 episodes, 84 (56.3%) were due to Gram-positive bacteria, 62 (41.6%) to Gram-negative bacteria, and 3 (2.1%) to polymicrobial flora, no episodes of fungi were found. There was a trend, but not statistically significant, increase over time in the number of Gram-negative CRBSIs among the total CRBSIs, rising from 37.8% in the first period to 41.2% in the second period and to 44.3% in the last period, with a parallel decrease in the percentage of Gram-positive CRBSIs (from 59.5% to 56.9% and subsequently to 54.1%). Between Gram-negative, we reported an intensification of CRBSI due to Enterobacterales, particularly Escherichia coli. Among the Gram-negative, we have isolated germs rarely reported in the literature, such as Burkholderia cepacia, Pantoea agglomerans, and Rhizobium radiobacter. Regarding Gram-positive bacteria, a triplicate incidence of Staphylococcus aureus was reported with MRSA accounting for 42% in the third period. Among the Gram-positive bacteria, we reported two episodes of Kocuria kristinae and two of Bacillus spp. Our data demonstrated that the epidemiology of CRBSI in the same center, will change over time and Gram-negative strains are an increasing cause of CRBSI. The limitation of the present report is that statistical significance has not been reached, probably due to the limited number of CRBSI. New bacteria, both Gram-negative and Gram-positive, are emerging. Collaboration with the Microbiology Department appears essential to an appropriate diagnosis.

Reference: