Introduction:
Elderly are particularly susceptible to bacterial infections and sepsis, and they comprise an increasing proportion of intensive care unit (ICU) admissions. Our aim was to evaluate the impact of age on critically ill infected patients.

Methods:
We performed a post-hoc analysis of all infected patients admitted to ICU enrolled in a 1-year prospective, observational, multicenter study involving 14 ICUs. Patients aged <65, 65-74 and >=75 years were compared (group A, B, and C). Multidrug-resistance (MDR) was defined as acquired non-susceptibility to at least one agent within three or more antimicrobial categories.

Results:
Of the 3766 patients analyzed, 1652 (43.9%) were infected on ICU admission. Of these, 828 (50%) belonged to group A, 434 (23%) to group B and 440 (27%) to group C. Group C were more dependent, had higher SAPS II and Charlson scores (p<0.05). ICU and hospital length of stay did not differ between groups. Microorganism isolation and bacteremia were higher in group B (53% and 24%, respectively) than groups A (45% and 19%, respectively) and C (47% and 17%, respectively; p<0.05). Septic shock was present in 58% of patients and was more frequent in groups B (55%) and C (55%) than group A (48%). The most common sources of infections were respiratory and intra-abdominal. Isolation of gram-negative bacteria was significantly increased in group B and C (p=0.034). The most common isolated bacteria were Escherichia coli (17%), Staphylococcus aureus (15%) and Pseudomonas aeruginosa (8%) for all groups. In total, 151 isolates (22%) corresponded to MDR bacteria, of which 57% were Staphylococcus aureus. Age was not a risk factor for infection by MDR. All-cause mortality in ICU and hospital was: 23% and 30%; 29% and 40%; 36% and 53% - respectively for groups A, B, and C (p < 0.001).

Conclusion:
Old patients (65-74 years) were more prone to present with bacteremia, which could account for the increased severity of sepsis and higher all-cause mortality. Age was not a risk factor for MDR infection.