Introduction:
Arterial catheters are commonly used in Intensive Care Units (ICU) and are among the most frequently manipulated vascular access devices. Our aim was to evaluate the rate of arterial catheter-related bloodstream infection and colonization.

Methods:
This was a 12-month, prospective and monocentric cohort study, performed in a multipurpose ICU. All arterial catheters, inserted in or presented to the ICU, were cultured and assessed for colonization or catheter-related bloodstream infection (CRBI).

Results:
We enrolled 119 patients (63.8% males, average age 59±17 years, SAPS 2 42±21) of whom a total of 141 arterial catheters were analyzed for a total of 1552 catheter-days. Radial arterial catheters were inserted in 88.7% (n=125), femoral arterial catheters in 7.8% (n=11) and other arterial catheters in 3.5% (n=5). Signs of dysfunction were found in 28.8% and 45.5%, respectively. Radial arterial catheters colonization (n=5) and CRBI (n=1) occurred at a rate of 3.0 and 0.8/1000 catheter-days. Femoral arterial catheters colonization (n=2) and CRBI (n=1) occurred at a rate of 10.8 and 5.4/1000 catheter-days, respectively. Mean catheter time insertion was significantly higher in colonized catheters/CRBI (21±8 days; 95% CI: 14-28) when compared to arterial catheters with negative cultures (10±8 days; 95% CI: 9-12); p = 0.002). Colonized lines showed Acinetobacter baumannii (n=3), Staphylococcus epidermidis (n=1), Enterococcus spp (n=1) and Pseudomonas aeruginosa (n=1). CRBI were caused by Staphylococcus epidermidis (n=1) and Staphylococcus haemolyticus (n=1).

Conclusion:
The incidence of radial arterial catheters colonization and CRBI were lower than reported rates in literature. Colonization and CRBI rates were higher in femoral catheters. Femoral catheters showed dysfunction more frequently. Prolonged catheterization was associated with colonization and CRBI.