Background: Staphylococcus aureus (Sa) bloodstream infections (BSI) are an important cause of mortality and morbidity worldwide. However, a comprehensive evaluation of the clinical impact of these infections has not been performed in Latin America (LA). We conducted a multinational prospective surveillance of BSI to compare 30-day attributable mortality between MSSA and MRSA.

Methods: A cohort study, with 84-days follow-up was conducted in nine LA countries: Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru and Venezuela. A total of 921 Sa-BSI were included (126 in Argentina, 146 in Brazil, 134 in Chile, 73 in Colombia, 818 in Ecuador, 19 in Mexico, 150 in Peru and 28 in Venezuela). The prevalence of MRSA was 45%. Both MSSA and MRSA were more frequently acquired in hospitals. Patients with Sa-BSI-MRSA had more frequent previous hospitalizations (7% vs. 3%, p<0.001); previous MRSA infections (4% vs. 1%, p<0.001); previous use of antibiotics (57% vs. 24%, p<0.001); severity of illness (34 vs. 20 days, p<0.001). MRSA was associated with higher 30-day attributable mortality (1.85 (1.25-2.74), p=0.002, adjusted by age, sex, comorbidities, Charlson index score, source of BSI, PI bacteremia score, complicated bacteremia and hospital. The Cox regression showed also higher mortality for BSI-MRSA [HR: 1.85 (1.25-2.74), p=0.002] compared to MSSA (1.32 (95%CI:1.11-1.56), P=0.002) adjusted by age, sex, comorbidities, Charlson co-morbidity score, source of bacteremia, PI bacteremia score, complicated bacteremia and hospital.

RESULTS

A cohort study was carried out in 23 hospitals of 9 Latin American countries from 2010 to 2012. Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru and Venezuela. Adult patients with clinically significant BSI due to S. aureus were included in the study. A total of 921 Sa-BSI were included (126 in Argentina, 146 in Brazil, 134 in Chile, 73 in Colombia, 818 in Ecuador, 19 in Mexico, 150 in Peru and 28 in Venezuela). The prevalence of MRSA was 45%. Both MSSA and MRSA were more frequently acquired in hospitals. Patients with Sa-BSI-MRSA had more frequent previous hospitalizations (7% vs. 3%, p<0.001); previous MRSA infections (4% vs. 1%, p<0.001); previous use of antibiotics (57% vs. 24%, p<0.001); severity of illness (34 vs. 20 days, p<0.001). MRSA was associated with higher 30-day attributable mortality (1.85 (1.25-2.74), p=0.002, adjusted by age, sex, comorbidities, Charlson index score, source of BSI, PI bacteremia score, complicated bacteremia and hospital. The Cox regression showed also higher mortality for BSI-MRSA [HR: 1.85 (1.25-2.74), p=0.002] compared to MSSA (1.32 (95%CI:1.11-1.56), P=0.002) adjusted by age, sex, comorbidities, Charlson co-morbidity score, source of bacteremia, PI bacteremia score, complicated bacteremia and hospital.

OBJECTIVES

- The primary objective of the study was to compare the 30-day attributable mortality rate of BSI caused by methicillin resistant S. aureus (MRSA) compared to methicillin susceptible S. aureus (MSSA) In Latin American countries.
- Secondary objectives were:
  - To compare length of stay of BSI-MRSA vs. MSSA.
  - To determine the prevalence of hVISA, VISA and VRSA.
  - To evaluate proper management of 3SBSI in Latin America.

RESULTS

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METHODS

A cohort study was carried out in 23 hospitals of 9 Latin American countries from 2010 to 2012. Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru and Venezuela. Adult patients with clinically significant BSI due to S. aureus were included in the study. A total of 921 Sa-BSI were included (126 in Argentina, 146 in Brazil, 134 in Chile, 73 in Colombia, 818 in Ecuador, 19 in Mexico, 150 in Peru and 28 in Venezuela). The prevalence of MRSA was 45%. Both MSSA and MRSA were more frequently acquired in hospitals. Patients with Sa-BSI-MRSA had more frequent previous hospitalizations (7% vs. 3%, p<0.001); previous MRSA infections (4% vs. 1%, p<0.001); previous use of antibiotics (57% vs. 24%, p<0.001); severity of illness (34 vs. 20 days, p<0.001). MRSA was associated with higher 30-day attributable mortality (1.85 (1.25-2.74), p=0.002, adjusted by age, sex, comorbidities, Charlson index score, source of BSI, PI bacteremia score, complicated bacteremia and hospital. The Cox regression showed also higher mortality for BSI-MRSA [HR: 1.85 (1.25-2.74), p=0.002] compared to MSSA (1.32 (95%CI:1.11-1.56), P=0.002) adjusted by age, sex, comorbidities, Charlson co-morbidity score, source of bacteremia, PI bacteremia score, complicated bacteremia and hospital.

CONCLUSIONS

There is a marked variation in the prevalence of Sa-BSI-MRSA in the region. BSI-MRSA is associated with higher 30-day attributable mortality than Sa-BSI-MSSA. BSI-MRSA is associated with higher 30-day attributable mortality than Sa-BSI-MSSA. No hVISA, VISA and VRSA were documented. Infection disease control should be reinforced to improve management of Sa-BSI in the region.