Reviewer's report

Title: Differences in characteristics between healthcare-associated and community-acquired infection in community-onset Klebsiella pneumoniae bacteremia in Korea

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Reviewer: Jonas Marschall

Reviewer's report:

This is a retrospective study on community-onset Klebsiella bacteremia and differences between healthcare-associated (HCA) and community-acquired (CA) types of infection. The aim was to elicit clinical differences, presumably with the long-term goal of improving management based on identifying the epidemiological difference between HCA and CA bacteremias. The authors enrolled >500 patients with Klebsiella pneumoniae bacteremia during 6 years and identified HCA episodes based on Friedman’s criteria. A significant proportion (>50%) had criteria for HCA. HCA bacteremia was more commonly associated with peritonitis or an unknown focus, whereas CA bacteremia was more often due to liver abscesses. Klebsiella causing HCA bacteremias were more resistant than those causing CA bacteremia. In multivariate analysis, HCA infection was not a predictor of 30-day mortality.

MAJOR

This is a well executed study that is carefully described in this well written manuscript. My main concern is that is does not do a good job at clarifying what it adds to the current literature or how it is different from previous studies. The objective as declared by the authors was to compare HCA to CA bacteremias, however, no clear, testable hypothesis is presented to us. The results simply add to the body of literature showing that there are certain differences in what we used to perceive as homogeneous, community-onset bacteremia (before Friedman et al first applied their new classification in 2002). However, this is not really novel. To improve the manuscript, the authors should better highlight why their study is important.

Regarding empiric treatment, the proportion of inadequately treated patients is surprisingly low at 7%. See for comparison other studies that reported much higher rates. For instance, McDonald et al (Arch Intern Med 2005) found 8% (CA), 25% (HCA), and 32% (nosocomial) bacteremias, respectively, to be treated inadequately in the beginning. I think this should be discussed as well.

A cursory literature search in Pubmed (with the key words “klebsiella”, “bacteremia”, “community”, and “healthcare”) reveals at least one other study that could be discussed in the results. Marschall et al. (Infect Control Hosp Epi 2009) compared HCA to CA and nosocomial Gram-negative bacteremias and also failed to see differences in outcomes between these types of bacteremias. An
important point in Jung et al.’s analysis is that the variation of treatment (drug, duration, dosage) was not taken into account when they did the multivariate analysis of mortality predictors. This should be discussed as a limitation. After all, what providers would really want to know is whether a specific management is better suited for HCA or CA bacteremia, respectively.

MINOR

Abstract:
Line 3: KpB is not an established abbreviation for Klebsiella pneumoniae bacteremia. Would suggest “Kp-BSI”.
Line 6: “clinical characteristics OF HCA and CA infections”

Introduction:
Line 6: “associated with liver abscessES”
Line 7: would add “EAST Asian countries”

Methods:
Line 11: “Helsinki” instead of “Helsiniki”
I could not find “prior antibiotic exposure” as a variable that was collected in this study. Antibiotic exposure may have had a significant impact on resistance levels and the likelihood of starting an adequate empiric antibiotic. If it was not collected then this should be mentioned under limitations.

Results:
Risk factors for 30-day mortality: would give Odds Ratios here so that the reader does not have to flip to the tables.

Discussion:
Line 15: would say “…although in THE TAIWANESE study…”
Page 2, line 8: Appropriateness suggests that an option could be no antibiotics at all. Would prefer to use the term “inadequacy”.
Page 3, line 7: would say: “Unlike THE U.S., South Korea has STARTED a national health insurance system IN 1977 and…”

References:
Reference #21: there are no volume and page number given for this article.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

No competing interesting