**Reviewer's report**

**Title:** Update of incidence and antimicrobial susceptibility trends of Escherichia coli and Klebsiella pneumoniae isolates from Chinese intra-abdominal infection patients

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**Reviewer:** Michael Satlin

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In this study, broth microdilution antimicrobial susceptibility testing was performed for 12 antimicrobial agents on over 5,000 strains isolated from intra-abdominal infections (IAI) from 21 hospitals in 16 cities in China from 2012-2014. They also performed phenotypic testing for ESBL production based on decreases in MICs with the addition of clavulanate to 3rd-generation cephalosporins. The authors found that 37% of IAI isolates screened ESBL positive, but this percentage decreased over the 3-year period, and that this decrease was largely driven by reductions in the proportion of hospital-acquired K. pneumoniae that were ESBL positive. The authors also found high rates of resistance to 3rd-generation cephalosporins and fluoroquinolones for all isolates. The authors further breakdown their results into community-acquired vs. hospital-acquired by specific organisms, and even specific regions in China.

I have the following recommendations to improve the manuscript:

**Major comments:**

1) I find that the Discussion is too much repetition of Results and should be truncated to focus on inferences based on the Results. I also found that certain information, such as >80% of ESBL-positive E. coli were susceptible to IPM, ETP, AMK, and TZP were presented 4 times! (Abstract, Results, Discussion, and Summary). There is way too much repetition.

**Minor comments:**

1) Abstract: It would be helpful to provide some sense of the overall #s of isolates that were tested, so that this strength of the paper can be quickly realized by the reader.
2) Abstract: Instead of merely reporting the antimicrobial agents for which the %susceptibilities are >80% or >70%, I think it would be worth reporting the %susceptible for these key agents (IPM, EPT, AMK, TZP) for E. coli and K. pneumoniae. This would provide the reader with more information.

3) There are multiple instances of run-on sentences (e.g., lines 134-138, lines 269-273) and some sentences which are not complete sentences (e.g., line 140-141, "Since …"). These should be edited.

4) Methods: The data on # of strains and how many were Enterobacteriaceae (lines 165-169) should be reserved for Results and can be removed from Methods section.

5) Methods: The last sentence in the ESBL detection section (lines 196-199) is already stated (lines 172-175), although this reference can be added to lines 172-175.

7) Results: I recommend providing a breakdown of the most common organisms, other than just E. coli and K. pneumoniae in the first paragraph (e.g., Enterobacter cloacae, Pseudomonas aeruginosa, and Acinetobacter baumannii).

8) Results: After reporting the organisms, I then recommend clearly stating the %susceptible for all 5160 isolates to the 12 antimicrobial agents. This information is important to clinicians deciding on empirical therapy for IAI. I also think one of the main conclusions of the study is that 3rd-generation cephalosporins and fluoroquinolones cannot be relied upon for the treatment of IAIIs in these Chinese hospitals. This should be commented on in the Discussion.

9) Results: Lines 215-220: I think it should be more clearly stated that there was a statistically significant decrease in the proportion of K. pneumoniae isolates that were ESBL producers, but that this decline was not statistically significant for E. coli. I also think the last part of this long sentence (" which …") can be removed.
10) Results: Lines 221-225: I think it would be also worth mentioning Proteus mirabilis here.

11) Results: Lines 225-226: I think it makes most sense to start the paragraph with this sentence (ESBL % in all IAIs), then start breaking down by pathogen and eventually explain that the decrease overall in IAI isolates that were ESBL-positive was primarily due to decreased ESBL rates among hospital-acquired K. pneumoniae.

12) Results: Line 247: Should the time period be 2012-2014?

13) Table 2: Why is there only a P value comparing %susceptibilities of CA K. pneumoniae to HA K. pneumoniae? (yet there are no P values for E. coli). Also, why are P values reported for some agents and not others?

14) Table 2: On quick inspection, the differences in fluoroquinolone susceptibilities between HA Kp and CA Kp do not seem to be statistically significant. Please recheck this.

15) Results: Lines 262-267. I think these inferences should be taken with caution, as for most antimicrobial agents these differences were not statistically significant.

16) ESBL-producing E. coli and K. pneumoniae are supposed to be susceptible to cefoxitin. Please comment on why you think such a high proportion of these isolates tested cefoxitin-resistant. This would be unusual unless some of these isolates also had AmpC enzymes or carbapenemases.

17) Discussion: Line 333-334. Combining metronidazole to fluoroquinolones as "combination therapy" would not help the problem that there are high rates of resistance to the fluoroquinolones among E. coli and K. pneumoniae in IAIs in this study. Metronidazole only adds anaerobic coverage. Please revise.

18) The limitation of not having any genotypic or molecular data for these strains should be noted in the Discussion.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
Yes

Are the conclusions drawn adequately supported by the data shown?
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