

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

Title (Provisional)

Risk factors and drug resistance of adult Community onset urinary tract infections caused by Escherichia coli-producing extended spectrum β -lactamase in the Chongqing region, China: A retrospective case-control study

Authors

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VERSION 1 - REVIEW

Reviewer	1
Name	Ibrahim, Muhammad
Affiliation	COMSATS University Islamabad, Biosciences
Date	14-Jul-2024
COI	No

Overall, research article is considerable, but authors have to revise entire manuscript again.

Such as there are several flaws in writing i.e Urinary tract infection (UTI), characterized by bacterial resistance and recurrence. No not only bacterial resistance and recurrence. Many other factors too.

"We herein retrospectively reviewed patients diagnosed with CAUTIs caused by E. coli diagnosed from May 2017 to December 2022" Where is the data of E coli? How it was identified? and how author can make sure it is E. coli?

Overall methodology, results and discussion need to be revise.

Reviewer	2
Name	Anderson, Daniel T
Affiliation	Augusta University, Pharmacy
Date	02-Aug-2024
COI	None

Thank you for the opportunity to review this article. This retrospective, observational study evaluated the association of rates of ESBL e. coli among patient with community acquired urinary tract infections. As antimicrobial resistance increases in prevalence world-wide, this is a timely study that evaluates risk factors for resistance and general prevalence.

I have a few general questions summarized below:

Line 70: Would recommend a different acronym than “CAUTI” as this is widely understood to mean “catheter-associated urinary tract infection” which could confuse readers.

Line 99: When considering exclusion criteria, did you consider excluding patients with a history of e. coli isolated from the urinary tract? Is it possible that the results could be conflated by patient who already had a history of ESBL EC UTI?

Line 144: Regarding the analysis of indwelling urinary catheter insertion within 6 months, were these patients who presented with a urinary catheter present or had a urinary catheter placed and subsequently removed in the prior six months? This should be explained and it should be stated how many patients presented with a urinary catheter at the time of index culture as these are known to be the source of prolong contamination with MDR organisms.

Table 4: The resistance rates for fluoroquinolones and trimethoprim/sulfamethoxazole seem abnormally high. What are the local resistance rates? Table 4: “Bactrim” should be changed to “trimethoprim/sulfamethoxazole”

Discussion: A section on limitations is missing. The authors should address any pertinent limitations that may impact interpretation of the study findings.

The English writing is good overall, but proofreading and minor edits are required. There were a few instances of missing words, duplicative words, improper tense, etc.

VERSION 1 - AUTHOR RESPONSE

Responses to Reviewer#1

1. We have revised the manuscript to address the deficiencies in writing and content.
2. We have employed Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF MS) for strain identification to screen patients with urinary tract infections caused by Escherichia coli. This information has been supplemented in the microbiological methods section of the manuscript.

Responses to Reviewer#2

Line 70: To avoid ambiguity, we have consistently revised the abbreviation CAUTIs to COUTIs (Community Onset Urinary Tract Infections) throughout the manuscript.

Line 99: For patients with a history of recurrent urinary tract infections caused by *Escherichia coli*, we have only included clinical samples from their first episode of illness. There is no duplication of samples from patients with multiple recurrences. We have supplemented this point in the exclusion criteria.

Line 144: The patients with indwelling urinary catheters in this study were all long-term catheterized individuals, who had their catheters in place at the time of COUTIs and microbial cultures. The description “indwelling urinary catheter within 6 months” is indeed inaccurate, and we have revised it to “indwelling catheter outside hospital”.

Table 4: After consulting local literature, we found a thesis indicating that the resistance rate of ESBL-producing *Escherichia coli* to trimethoprim/sulfamethoxazole in Chongqing is 60.5%, which is close to the findings of our study. We have changed “Bactrim” to “trimethoprim/sulfamethoxazole” in Table 4.

Discussion: We have included a section discussing the limitations of our study within the Discussion part.

VERSION 2 - REVIEW

Reviewer	2
Name	Anderson, Daniel T
Affiliation	Augusta University, Pharmacy
Date	01-Oct-2024
COI	

Thank you for your responses to all questions and comments regarding the manuscript.

VERSION 2 - AUTHOR RESPONSE

1. We have revised the content related to the antibiotic resistance analysis of ESBL-producing *Escherichia coli* in both the abstract and the results section to ensure the accuracy of both language and content.
2. We have proofread the entire manuscript and corrected all grammatical and spelling errors that we identified.
3. We have further refined and supplemented the section discussing the limitations of this study by adding discussions on the limitations of retrospective analyses, the impact of not

conducting a prior sample size estimation on statistical results, and the limitations of microbiological testing methods.

4. We have optimized the data availability statement.

5. Unfortunately, we did not conduct a prior sample size estimation. Since this is a retrospective analysis, we simply included all eligible samples from the past five years, which has a negative impact on the statistical power of the study results. We have explained this in the limitations section of our discussion.