

Peer Review Report

Review Report on Comparative evaluation of the antibiotic resistance profile of *Staphylococcus aureus* isolated from breeders and livestock

Original Article, Int J Public Health

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EVALUATION

Q 1 Please summarize the main findings of the study.

A comparative evaluation of the resistance profile of *Staphylococcus aureus* to antibiotics was carried out in this study. To this end, the authors carried out sampling among a certain number of livestock animals, notably pigs, cattle and goats, as well as among breeders. Different types of methods were used to achieve their goal. It's about:

- standard isolation and identification methods;
- the method of diffusion of antibiotic disks on agar medium and
- the phenotypic characterization of biofilm production in Congo Red Agar (CRA)

In total, eighteen strains of *Staphylococcus aureus* were isolated from different breeders compared to 63 from animals. Of these, pigs recorded a high isolation rate of 41.6%. Concerning the resistance of *Staphylococcus aureus*, among animals, isolates from pigs presented high rates of resistance to the antibiotics tested. This study showed that 28.0% of pig isolates were resistant to at least one antibiotic. Seventeen of the 81 isolates were resistant to one antibiotic however, 31 of the 81 isolates (38.2%) were resistant to two antibiotics while 48 of the 81 isolates (59.3%) showed MDR. In contrast, 6 (33.3%) of the 18 *S. aureus* isolates from breeders were resistant to methicillin.

Q 2 Please highlight the limitations and strengths.

Two limitations can be highlighted here:

- Molecular characterization of antibiotic resistance genes.

Although the phenotypic characterization was carried out, the molecular side would provide more precision regarding the susceptibility of antibiotic resistance.

- The clonal relationship of *Staphylococcus aureus* isolates

this investigation would make it possible to assess the parental relationship that would exist between the isolated strains.

The strengths of the study:

- This study confirms that *Staphylococcus aureus* is a zoonotic strain
- The antibiotics most used in animal medicine must be used rationally to reduce resistance and multi-resistance.

Q 3 Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

I enjoyed reading the manuscript. It is well written and the analysis is well done. This is an important contribution to understanding the problem of zoonotic strains and their resistance to antibiotics.

The study is reproducible based on the method description and the conclusions are supported.

However, there remain a few points that need to be clarified and corrected to improve the manuscript before possible publication. Below I highlight the few concerns I have in the major and minor comments.

Major comment:

In my opinion, the wording of the title, and precisely in line 2 where it is written “isolates from different breeders and breeders” please put “isolated from breeders and farm animals” instead.

Minor comments:

There are some key observations, important expressions to use.

In the Summary section:

Line 9: Please put “strains of” in place of “organisms”.

Line 15: Please put “antibiotics” in place of “medications”.

Line 18: please put “breeders” instead of “workers”

Line 23: Please add Staphylococcus aureus among the proposed words “antibiotics” instead of “organisms”

In the Introduction section:

Line 29: please put “infections” instead of “complications”

In the Methods section

Line 99: please put “the inoculum” instead of “the mixture”

Line 105: update the CLSI reference (2013), it is 2024

In the results section

Line 130: please put “breeders” in place of “livestock workers” and add “breeding” after “animals”

Line 142: Table 1: I propose as a title Prevalence of S. aureus isolated from breeders and farm animals

Line 150: for table 3 I propose Distribution of MRSA among breeders and farm animals

Line 161: as the title of Figure 1, I propose Comparison of the antibiotic resistance profile of S. aureus isolates from livestock and breeders

Line 171 and 172: I propose Comparison of the antibiotic susceptibility profile of S. aureus isolates from livestock and breeders

In the Discussion section

Line 180: Please put “antibiotics” in place of “medications”

Line 214: Please remove the conjugated verb “have” and put “could have” instead

Line 232: Please put “antibiotics” in place of “medications”

PLEASE COMMENT

Q 4 → Is the title appropriate, concise, attractive?

The title that the author gave to his manuscript is: Comparative Evaluation of the antibiotic resistance pattern of Staphylococcus aureus isolates from different Livestock and Livestock Farmers.

To make the title appropriate, concise and attractive, I propose as a new title:

Comparative evaluation of the antibiotic resistance profile of Staphylococcus aureus isolated from breeders and livestock

Q 5 → Are the keywords appropriate?

The proposed keywords are appropriate. however, I wish Staphylococcus aureus was added

Q 6 → Is the English language of sufficient quality?

Yes, the English language is of sufficient quality?

Q 7 → Is the quality of the figures and tables satisfactory?

Yes.

Q 8 → Does the reference list cover the relevant literature adequately and in an unbiased manner?)

After analyzing the bibliographic references, we can confirm that they are related to the theme of the study

QUALITY ASSESSMENT

Q 9 ▶ Originality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 10 ▶ Rigor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 11 ▶ Significance to the field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 12 ▶ Interest to a general audience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 13 ▶ Quality of the writing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 14 ▶ Overall scientific quality of the study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REVISION LEVEL

Q 15 ▶ Please make a recommendation based on your comments:

Minor revisions.