Qeios

Peer Review

Review of: "Serological detection strategy and prevalence of HIV and Viral Hepatitis B and C in blood donors in Yaoundé Cameroon"

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Your manuscript presents valuable research on the prevalence of transfusion-transmissible infections (TTIs) among blood donors in Cameroon. However, several areas require improvement to enhance clarity, coherence, scientific rigor, and accuracy. Below is a section-by-section review with constructive corrections and suggestions.

General Comments:

✔ Strengths:

- The study is relevant and timely, addressing a critical public health concern in Cameroon.
- The methodology is well-documented and meets international blood safety standards.
- The findings are clearly presented with numerical and statistical backing.

1. Abstract:

✔ Positive Aspects:

- The background clearly states the problem.
- The methodology is well-described.
- The findings are numerically presented and easy to interpret.

✘ Corrections and Suggestions:

1. Improve sentence structure for clarity:

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- Original:

  "The seroprevalence of Hepatitis B virus (HBV), Hepatitis C virus (HCV), Human immunodeficiency virus (HIV) was determined among prospective blood donors at blood bank Yaoundé University Teaching Hospital (YUTH), Yaoundé, Cameroon."

- Revised:

  "This study determined the seroprevalence of Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), and Human Immunodeficiency Virus (HIV) among prospective blood donors at the Blood Bank of Yaoundé University Teaching Hospital (YUTH), Cameroon."

2. Clarify statistical data reporting:

- Original:

  "Screening samples for total Anti-HBc IgG+IgM revealed that 613 (52.75%) samples were reactive."

- Revised:

  "A total of 613 samples (52.75%) tested positive for Anti-HBc IgG+IgM, indicating past exposure to HBV."

3. Strengthen the conclusion:

- Original:

  "The confirmatory results of HIV and HCV underline the need to re-evaluate viral infection prevalence in Cameroonian blood donors."

- Revised:

  "These findings emphasize the need for enhanced screening strategies and more rigorous confirmatory testing to improve blood transfusion safety in Cameroon."

2. Introduction:

✔ Positive Aspects:

- Provides a good background on the significance of TTIs in sub-Saharan Africa.
- Explains WHO recommendations for safe blood transfusion practices.

✘ Corrections and Suggestions:

1. Improve flow and avoid redundant statements:

- Example:

- Original:

  "In SSA the prevalence of viral infections such as Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) in blood donors is high considering their epidemiology and especially the blood safety process and procedures implemented by blood services."

- Revised:

  "In sub-Saharan Africa (SSA), the prevalence of transfusion-transmissible infections (TTIs) such as HIV, HBV, and HCV remains high despite ongoing efforts to improve blood safety procedures."

2. Clarify the research gap:
   - Original:

     "Monitoring of the magnitude of TTIs in blood donors is important for determining the risk of transmission of infections and optimizing donor recruitment strategies."

   - Revised:

     "Despite existing blood donor screening policies in Cameroon, limited data exist on the prevalence of TTIs, necessitating further research to optimize donor recruitment and blood safety protocols."

3. Add more recent citations (2019–2023) to support global prevalence statistics.

3. Methods:

✔ Positive Aspects:

- The study design is well described.
- Screening and confirmatory testing methods follow WHO guidelines.
- Ethical considerations are mentioned.

✘ Corrections and Suggestions:

1. Clarify how donors were recruited (volunteers vs. replacements).
2. Provide justification for laboratory methods:
   - Why were INNO-LIA and Western Blot used as confirmatory tests?
3. State how missing or invalid data were handled in the statistical analysis.

4. Results:

✔ Positive Aspects:

- Findings are well-structured and statistically supported.
- Tables and figures provide clarity.

✘ Corrections and Suggestions:

1. Ensure consistency in reporting percentages:
    - Example:
        - Original:

          "Screening for viral infections showed that 91 (7.80%) of total sample donations were reactive for HBsAg+, 14 (1.2%) for HIV+, 11 (0.95%) for HCV+, and 1 (0.08%) for HBsAg+ and /HIV+."
        - Revised:

          "Among the 1,162 blood donors, the prevalence rates for HBsAg, HIV, and HCV were 7.8% (n=91), 1.2% (n=14), and 0.95% (n=11), respectively. Co-infection with HBsAg and HIV was detected in 1 donor (0.08%)."
2. Improve table readability:
    - Merge similar data into one consolidated table rather than splitting by gender, age, and donor type in multiple locations.

5. Discussion:

✔ Positive Aspects:

- The findings are compared with previous studies.
- Highlights the importance of confirmatory testing.

✘ Corrections and Suggestions:

1. Expand comparative analysis:
    - Compare HBV and HIV prevalence with other SSA countries (Nigeria, Ghana, Ethiopia).
    - Justify differences observed (e.g., different screening strategies, donor populations).
2. Explain the significance of HBcAb findings:
    - Original:

      "The frequency of HBcAb only positive donors was 44.4% (516/1162)."
    - Revised:

      "The high prevalence of HBcAb (44.4%) suggests a significant number of blood donors with past

HBV exposure, emphasizing the need for nucleic acid testing (NAT) to rule out occult HBV infection."

3. Address limitations of the study:
    - Possible selection bias (voluntary vs. family donors).
    - Lack of NAT testing, which could underestimate HBV/HCV prevalence.

6. Conclusion:

✔ Positive Aspects:

- Summarizes key findings.

✘ Corrections and Suggestions:

1. Avoid redundancy:
    - The conclusion repeats the discussion verbatim—it should be more concise.
    - Provide a call to action: Recommend policy changes, improvements in screening algorithms, and future research directions.

7. References:

✘ Corrections and Suggestions:

- Some references lack DOIs—ensure completeness.

Final Assessment:

✔ Scientific Quality: Very Good

✔ Relevance & Importance: High

✘ Grammar & Flow: Needs improvement

✘ Comparative Discussion: Should be expanded

✘ Conclusion: Too repetitive—needs refinement

Declarations

Potential competing interests: No potential competing interests to declare.