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Peer Review

Review of: "Incidence and Predictors of Ocular Hypertension After Intravitreal Injection of Bevacizumab Among Patients Attending KCMC Hospital, 2023–2024"

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This prospective cohort study, conducted at KCMC Hospital in Tanzania, aimed to evaluate the incidence, patterns, and determinants of ocular hypertension (OH) following intravitreal Bevacizumab injections, addressing a significant regional data gap. The study included 120 participants and defined OH as an IOP >21 mmHg or an increase >5 mmHg from baseline. Methods involved detailed IOP measurements at baseline, immediately post-injection, and at six-week intervals for six months, utilizing paired t-tests, Chi-square tests, log-rank tests, and Poisson and multivariate regression analyses to identify associations. The study found an overall OH incidence of 15%, with significant associations between OH and the number of injections (HR 2.17) and a history of YAG laser capsulotomy (HR 0.33). Short-term IOP spikes were also observed, with normalization taking longer after repeated injections. The research provides crucial local insights into a common complication, demonstrating a higher incidence than some other studies and identifying key risk factors. The clear clinical implications for patient monitoring in Tanzania highlight the study's relevance for public health and future research.

However, the authors are invited to consider the following suggestions:

=In the Methods section:

1. Include a formal calculation or justification for the chosen sample size (N=120) and discuss the power of the study to detect the reported effects. This is a crucial omission. *[If the true incidence of OH or the true effect of specific predictors (such as the number of injections) is smaller than what the study was powered to detect, the reported "significant" findings may be overestimated, or other true effects may have been missed.*

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Without a power calculation, it's harder to be certain that the 120 participants are sufficient to accurately reflect the true incidence and risk factors of OH across all patients receiving Bevacizumab in Tanzania. Likewise, if the study were overpowered (which is less likely given the absence of a power calculation), it might report statistically significant but clinically minor changes.]

2. Provide more precise definitions and categorization for all collected variables beyond just IOP (e.g., how "ocular conditions," "systemic factors," and "injection frequency" were precisely recorded and used in analysis).

3. If applicable, provide citations for validation studies of the Icare tonometer or any other instruments used for data collection beyond just naming them.

4. Briefly mention if and how assumptions for the statistical models (e.g., for Poisson regression or linear regression if used for mean IOP changes) were checked (e.g., goodness-of-fit for Poisson, normality of residuals).

=In the Results section:

5. While Figures 2 and 3 show short-term spikes, a figure illustrating the progressive increase in mean IOP over the 6-month follow-up for injected versus non-injected eyes (currently presented in Table 2) could better enhance visual understanding.

=In the Discussion section:

6. Expand the discussion on how the findings compare with global literature, particularly regarding the higher incidence rate observed, and speculate on potential reasons for discrepancies. [*The reported incidence of 15% for OH is a key finding. Comparing this to incidences reported in different geographical regions, healthcare systems, and patient populations globally provides context. For example, some studies report lower incidences, while others might report higher, depending on follow-up duration, definition of OH, and patient characteristics. This comparison helps understand if the observed incidence is unique to the Tanzanian context (e.g., due to patient demographics, underlying retinal conditions, treatment protocols, or monitoring frequency) or falls within a broader global range. Likewise, the study identified "number of injections" and "YAG laser capsulotomy" as significant predictors. Comparing these findings to global studies that have investigated similar risk factors (e.g., baseline IOP, patient age, type of retinal disease, concurrent glaucoma medications, or specific injection techniques) helps to confirm consistency (are these predictors universally recognized, or are they more prominent in this specific population?) and identify novel factors (does the study identify any predictors that are less commonly reported globally, potentially due to unique local factors? -which is crucial for future designing of*

tailored practice guidelines). The paper itself cites several relevant studies in its introduction (e.g., References 3, 5, 6, 7, 8, 9, 10, 16, 17) which would form the basis of such a comparison in its full discussion section.]

7. Acknowledge particular limitations, such as the generalizability of findings only to similar populations and settings (e.g., KCMC Hospital patients).

8. Suggest specific avenues for future research, such as studies in other regions of Tanzania or East Africa, to confirm the regional generalizability of the findings.

= In the Declarations section

9. Include a clear statement on whether the underlying data is available, where it can be accessed (e.g., a repository), or if there are restrictions (e.g., due to patient privacy).

Declarations

Potential competing interests: No potential competing interests to declare.