ISSN(O): 2320-5407 | ISSN(P): 3107-4928

ISSN NO. 2320-5407

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Manuscript No.: IJAR-56975

Title: A Study To Correlate Optical Coherence Tomography Parameters with Visual Acuity in patients with Diabetic Macular Edema

Recommendation:

Accept as it is .....

Accept after minor revision.....

Accept after major revision .....YES

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality			√	
Techn. Quality				√
Clarity				√
Significance		√		

Reviewer's ID: JPR-094

Detailed Reviewer's Report

 # **REVIEWER REPORT**

□ **1. Strengths**

*** **Relevant Clinical Topic:****
The study addresses an important ophthalmic condition—Diabetic Macular Edema—which is a major cause of visual impairment.

*** **Comprehensive Parameter Analysis:****
Inclusion of multiple OCT biomarkers (CFT, DRIL, EZ, HRF, etc.) provides a broader understanding compared to single-parameter studies.

*** **Prospective Study Design:****
A prospective observational approach over 3 years strengthens data reliability.

*** **Adequate Sample Size:****
Analysis of 150 eyes from 120 patients is reasonably sufficient for correlation analysis.

*** **Use of SD-OCT Technology:****
Application of Optical Coherence Tomography enhances diagnostic precision.

□ **2. Weaknesses**

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Major Issues

*** **Low Novelty / Redundancy:****

*** Similar correlations (especially DRIL and EZ with VA) are already well established in literature.**
*** The study does not clearly define what *new knowledge* it adds.**

*** **Statistical Limitations:****

*** Use of only Pearson correlation is insufficient.**
*** No multivariate regression to control confounders (age, duration of diabetes, prior treatment).**
*** Inclusion of both eyes from some patients introduces **intra-subject bias**.**

*** **Methodological Concerns:****

*** Mixed inclusion of treated and untreated patients may affect outcomes.**
*** No subgroup analysis based on disease severity or treatment history.**

Moderate Issues

*** **Language and Grammar Errors:****

*** Numerous grammatical mistakes and poor sentence construction.**
*** Reduces readability and scientific clarity.**

*** **Inconsistency in Data Reporting:****

*** p-value discrepancy (e.g., p=0.05 vs p=0.005 for CFT).**
*** Typographical and formatting errors throughout.**

*** **Poor Presentation of Tables/Figures:****

*** Tables are not properly formatted.**
*** Graph description incomplete.**

Minor Issues

*** Keywords formatting inconsistent**

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*** Abbreviations not uniformly defined**
*** Reference style inconsistent**

**3. Key Points**

*** DRIL and Ellipsoid Zone disruption show strong correlation with visual acuity.**
*** Hyperreflective foci in outer retinal layers indicate worse prognosis.**
*** Central foveal thickness shows only modest correlation.**
*** Some OCT parameters (NSRD, VR abnormalities) are not significantly correlated.**

**4. Significance**

*** The study has **moderate clinical relevance** as it reinforces the role of OCT biomarkers in predicting visual outcomes.**
*** However, due to **lack of novelty**, its contribution is mainly **confirmatory rather than innovative**.**
*** Potential utility in:**

*** Clinical prognosis**
*** Treatment monitoring**
*** Guiding therapeutic decisions**

**5. Recommendation**

**MAJOR REVISION REQUIRED**

Justification:

*** Significant methodological limitations**
*** Lack of novelty**
*** Poor language quality**
*** Inadequate statistical analysis**

**Specific Recommendations for Authors**

1. **Improve Novelty**

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*** Clearly state unique contribution (e.g., Indian population, combined scoring system).**

2. **Enhance Statistical Analysis**

*** Add multivariate regression analysis**
*** Adjust for confounding variables**

3. **Correct Methodology**

*** Analyze one eye per patient OR apply statistical correction**
*** Perform subgroup analysis (treated vs untreated)**

4. **Language Editing**

*** Professional English editing required**

5. **Revise Tables & Figures**

*** Proper formatting and labeling**
*** Include complete graphs**

6. **Clarify Results**

*** Resolve inconsistencies in p-values**
*** Present confidence intervals**

**Final Verdict**

****Decision: MAJOR REVISION****
Not suitable for acceptance in current form

 # **WHY MAJOR REVISION – JUSTIFICATION**

Overall Reason

The manuscript on Diabetic Macular Edema using Optical Coherence Tomography has **methodological flaws, statistical limitations, poor language quality, and low novelty, which significantly affect scientific validity.**

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**ABSTRACT SECTION (Lines 7–26)**

Line 7–9 (AIMS)

* Aim is **vague and poorly worded** ("which OCT parameter correlates more with Vision").
* Lacks hypothesis or clinical relevance.

Line 10 (DESIGN)

* "cross-sectional prospective" is **conceptually inconsistent** (cross-sectional ≠ prospective).

Line 12–16 (METHODS)

* Overloaded sentence; poor readability.
* Abbreviations (VR, HRF, EZ) not properly standardized.

Line 17–18 (STATISTICS)

* Only Pearson correlation used → **inadequate statistical approach**.
* No mention of confounder adjustment.

Line 19–23 (RESULTS)

* Missing **confidence intervals**.
* p-values inconsistently formatted.
* "most commonly seen" vs "most correlated" not clearly differentiated statistically.

Line 24–26 (CONCLUSION)

* Overgeneralized conclusions not justified by analysis.
* Grammar errors ("correlated withVision").

**INTRODUCTION (Lines 34–51)**

Line 35–38

* Basic information; lacks **critical literature synthesis**.

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****Line 44–46****

*** Claim "very few studies" is **incorrect** (many studies exist).**

****Line 47–51****

*** No clear **research gap or novelty statement**.**
*** Objective is repetitive and not sharply defined.**

**METHODS (Lines 53–101)**

****Line 54–55 (Study Design)****

*** Design unclear: cross-sectional vs prospective contradiction persists.**

****Line 55****

*** Ethics approval mentioned but **no approval number** provided.**

****Line 56–60 (Criteria)****

*** Inclusion/exclusion criteria **not precise enough** (e.g., severity grading missing).**

****Line 61–63****

*** Patients with prior treatments included → **major confounding bias** not controlled.**

****Line 63–64****

*** VA conversion described but **no standard protocol reference**.**

****Line 69–73 (Imaging)****

*** OCT protocol insufficiently detailed (no inter-observer variability, repeatability).**

****Line 74–76****

*** Classification of DME types not linked to analysis.**

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****Line 77–96 (OCT Parameters)****

*** Definitions lack **validation references**.**
*** Grading system appears arbitrary.**

****Line 97–101 (Statistics)****

*** Only Pearson correlation used → **major methodological weakness**.**
*** No:**

*** Multivariate regression**
*** Adjustment for confounders**
*** Sample size calculation**

**RESULTS (Lines 104–141)**

****Line 105–108****

*** Descriptive stats acceptable but poorly written.**

****Line 110–112****

*** Inclusion of both eyes → **statistical independence violation (major flaw)**.**

****Line 113–116****

*** Prior treatments not analyzed → confounding not addressed.**

Correlation Results (Lines 119–138)

****Line 120–121 (CFT)****

*** p=0.05 borderline; interpretation exaggerated.**

****Line 122–124 (Cystoid spaces)****

*** Non-significant result but still interpreted → misleading.**

****Line 125–127 (DRIL)****

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*** Significant but no adjustment for confounders.**

****Line 128–130 (HRF)****

*** Small subgroup (17 eyes) → ****statistical reliability questionable****.**

****Line 131–132 (NSRD)****

*** Properly reported non-significant.**

****Line 133–135 (EZ disruption)****

*** Strong correlation but ****causation implied incorrectly****.**

****Line 136 (HRF–EZ association)****

*** No statistical test clearly described.**

****Line 137–138 (VR abnormalities)****

*** Non-significant but still discussed clinically.**

****DISCUSSION (Lines 144–177)**

****Line 145–148****

*** Contradiction: p=0.05 earlier vs p=0.005 here.**

****Line 149–152****

*** Mechanisms discussed without proper referencing depth.**

****Line 153–156 (DRIL)****

*** Repetition of results; limited interpretation.**

****Line 157–163 (EZ disruption)****

*** Overemphasis without novelty.**

****Line 164–171 (HRF)****

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*** Literature cited but **no critical comparison**.**

****Line 172–176****

*** Claims about "standard parameter" are **overstated and unsupported**.**

**CONCLUSION (Lines 180–184)**

*** Overgeneralization beyond study design.**
*** No mention of limitations.**
*** Grammar and clarity issues.**

**REFERENCES (Lines 190–234)**

*** Inconsistent formatting.**
*** Some references incomplete.**
*** Citation style not uniform.**

**TABLES & DATA PRESENTATION (Lines 237–306)**

*** Tables poorly formatted and difficult to interpret.**
*** No table numbering consistency.**
*** Graph incomplete (line 305–306 cut).**
*** No legends or statistical annotations.**

 # **FINAL JUSTIFICATION FOR MAJOR REVISION**

□ Major Scientific Issues

*** Inadequate statistical analysis (no multivariate adjustment)**
*** Inclusion of both eyes → bias**
*** Confounding factors not controlled**
*** Weak study design clarity**

□ Major Writing Issues

*** Poor grammar and readability**
*** Inconsistent data reporting**

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*** Formatting errors**

□ Conceptual Issues

*** Low novelty (already well-established findings)**
*** Overinterpretation of results**

 # **FINAL DECISION**

****RECOMMENDATION: MAJOR REVISION****

****Reason:****
The manuscript has a valid clinical objective but suffers from **serious methodological, statistical, and presentation deficiencies, requiring substantial revision before reconsideration.**