

OCULAR MANIFESTATIONS OF ZIKA VIRUS INFECTION: A COMPREHENSIVE SYSTEMATIC REVIEW AND META-ANALYSIS

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Abstract

Topic: Zika virus (ZIKV) infection, primarily transmitted by *Aedes* mosquitoes, has been linked to various ocular manifestations ranging from mild conjunctivitis to severe conditions like uveitis and macular scarring.

Clinical relevance: This systematic review and meta-analysis aimed to synthesize data on the ocular manifestations of ZIKV infection, highlighting their prevalence and clinical implications.

Conclusion

Ocular manifestations of ZIKV infection are common and diverse, with significant implications for public health, especially in areas susceptible to Zika outbreaks. Future research should prioritize longitudinal studies to elucidate the mechanisms of ZIKV-related ocular conditions and develop targeted treatments. This study highlights the importance of integrating ophthalmological assessments into standard care for ZIKV and improving global surveillance and response strategies.

Methods

We conducted a comprehensive literature search in PubMed, Web of Science, and EMBASE up to May 5, 2024, adhering to the PRISMA guidelines. Studies included were cross-sectional, cohort, and case-control studies that reported primary data on ocular manifestations in humans infected with ZIKV. Meta-analytical procedures were implemented using R software to calculate pooled prevalence and assess heterogeneity and publication bias.

Results

Our search yielded 25 eligible studies, encompassing data from various countries including the USA, Brazil, and Mexico. The meta-analysis revealed a pooled prevalence of 39.4% (95% CI: 25.5% to 55.3%) for conjunctivitis and 25.9% (95% CI: 12.5% to 46.1%) for eye pain or retro-orbital pain among ZIKV cases. The studies documented a range of ocular manifestations, notably conjunctivitis, retro-orbital pain, and more severe complications like uveitis.

Identification of new studies via databases and registers

