1:20 PM

The Translation of CST to Visual Function: Persistent DME and QOL Measures With FAc Implants in the FAME Study

- Michael A. Singer, MD

OBJECTIVE To analyze anatomical and quality of life (QOL) associations with persistent edema in diabetic macular edema (DME) patients treated with 0.2 µg/day fluocinolone acetonide (FAc) implants.

PURPOSE To assess the relationship between change in QOL and decreasing central subfield thickness (CST) on optical coherence tomography (OCT) after treatment with the 0.2 µg/day FAc implant. CST was analyzed using the area under the CST versus time curve (AUC).

METHODS AUC was calculated for each patient treated with the 0.2 µg/day FAc implant using CST from OCT data in the FAME study. These data were then segregated into quartiles representing least persistent edema to most persistent edema by OCT central subfield at the end of 36 months, following initial treatment with 0.2 µg/day FAc. QOL was analyzed using outcomes from the NEI-VFQ-25 questionnaire. For each subgroup, the mean change from baseline in vision related QOL score was calculated for each NEI-VFQ-25 subscale; this change was tested for significance versus no change.

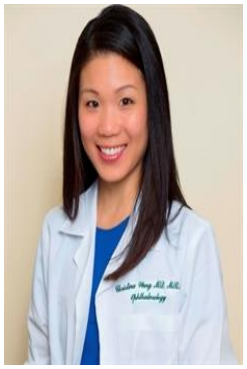
RESULTS For the subgroup with the least persistent edema (first quartile), significant improvements in scores were seen for general vision, near activities, distance activities, social functioning, mental health, role difficulties, driving, peripheral vision, and overall VFQ-25 score. For the second quartile, significant improvements in scores were seen for general vision, near activities, distance activities, social functioning, mental health, peripheral vision, and VFQ-25 overall score. Significant improvements were rarely seen in the third and fourth quartiles. There was a clear trend of lack of QOL improvement in the two quartiles with the most persistent edema versus those with the least persistent edema. In addition, the degree of improvement of NEI-VFQ-25 score between the first and second quartile was greater than the improvement in visual acuity (VA).

CONCLUSION The sustained release effect of continuous microdosing of FAc has the potential to minimize persistent edema with fewer injections. This may lead to increased visual function in these patients by improving patient's QOL. The improvement in QOL may reflect the decrease in overall retinal edema versus central macular edema affecting VA.

HUMAN RESEARCH This study involves human research.
IRB Approval Status: Approved by institutional review board

1:30 PM

Patient-Centric Assessment of the Quality of Care Delivered in a Diabetic Retinopathy Teleretinal Screening Program



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- Rishabh C Date, MD
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- Cynthia McClard, PhD
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OBJECTIVE To assess the quality of care delivered in a large, urban diabetic retinopathy teleretinal screening program

PURPOSE The use of teleretinal imaging (TR) to detect sight-threatening diabetic retinopathy (DR) has been shown to be effective. However, there is minimal data evaluating patient compliance, perceptions, or experiences with this unconventional screening method. The aim of this study is to evaluate the quality of care provided by TRI from a patient-centric approach.

METHODS Retrospective chart review and telephone-based survey study were conducted of patients screened via a large, urban DR TR program between November 2014-November 2017. The questionnaire inquired about topics such as satisfaction with the experience, education received, discomfort endured, and demographic information. Where relevant, responses were quantified on a 5-point Likert scale. For a subset of patients referred for in-clinic examination due to abnormal screening, compliance was

also evaluated. Data such as age, race, gender, hemoglobin A1c (HbA1c) level, and clinical examination data were collected for these patients.

RESULTS Complete surveys were collected for 257 patients. The majority of respondents were 51-60 years old (38%), female (70%), Hispanic (60%). 80% had planned to have their eyes examined within the year while 20% had not. 28% had never received a dilated examination before. Prior to their screening visit, 93% were aware that diabetes could cause ocular disease. Most patients were satisfied with the time waited during appointment (93%), care taken by staff (96%), and overall impression of screening (94%). Nearly all reported having confidence in the technology used for screening (96%). The majority of dissatisfied responses pertained to the quality of education received about DR (11%), explanation of the TR screening process (12%), and instructions provided regarding follow-up (23%). Only 52.0% (809/1,557) of those patients referred for in-clinic examination actually presented. Of those requiring a second follow-up appointment within 6 months, 83.4% attended this follow-up visit.

CONCLUSION TR screening is well-received by patients at our site. More than one-fifth of patients who were captured by the program were not planning on receiving an eye examination otherwise. Patient education, compliance with recommendations, and the results-sharing process were identified as areas needing improvement in order to better accommodate patient needs and improve compliance with DR screening.

HUMAN RESEARCH This study involves human research.
IRB Approval Status: Exempt from approval

1:35 PM

Determining Epidemiological Factors for Improved Telemedicine Screening Efficacy for Diabetic Retinopathy

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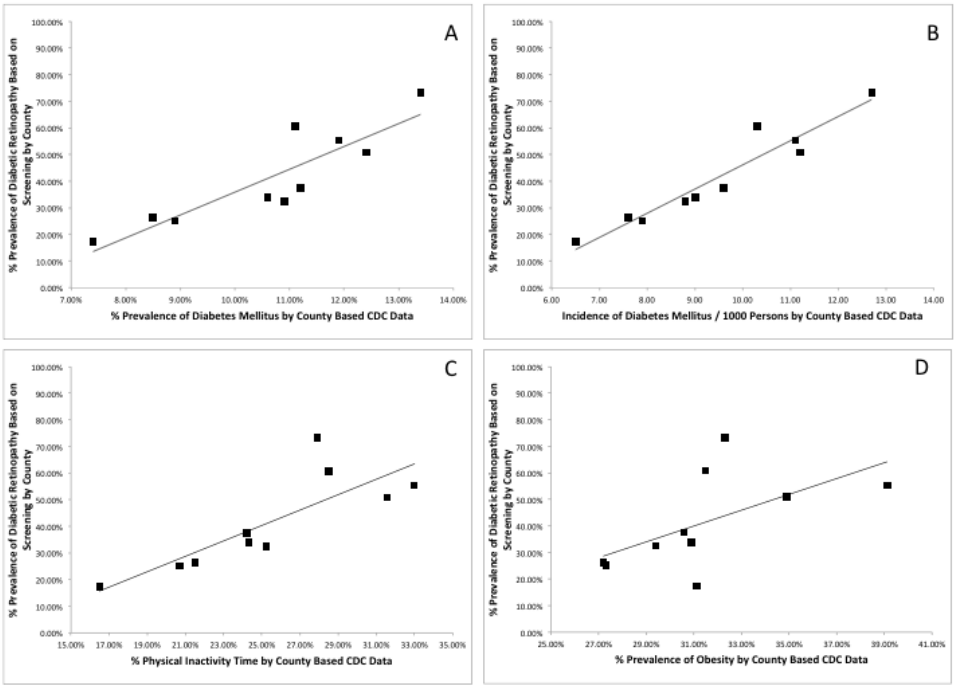
OBJECTIVE We determine the prevalence of retinopathy and macular edema in diabetic patients followed by endocrinologists, while identifying epidemiologic factors that improve efficacy of telemedicine screening.

PURPOSE For diabetic patients, telemedicine can improve access to evaluate for diabetic retinopathy (DR) and diabetic macular edema (DME). Among patients followed by endocrinologists, we screen for the prevalence rates of DR and DME. Furthermore, we evaluate epidemiologic factors that identify populations at higher risk of DR, who would derive greater benefit from telemedicine screenings.

METHODS The study was designed as a multicenter, retrospective chart review using the Intelligent Retinal Imaging System (IRIS) telemedicine platform. Data on endocrinology practices, patient specific data, and findings from screening images were included. Centers for Disease Control and Prevention (CDC) data on epidemiologic variables namely, prevalence of diabetes mellitus (DM), incidence of DM, obesity, and time of physical inactivity by county, were compared against prevalence rates of DR found at screening. The institutional review board approved this study.

RESULTS A total of 10,223 eyes of 5,242 patients with DM evaluated at 10 unique sites were identified. The presence of DR and DME was noted in 1781 (33.98%) and 226 (4.31%) imaging studies respectively. Of those with DR, the majority had mild DR (1291 studies; 24.63%), while the remainder had moderate (345 studies; 6.58%), severe (82 studies; 1.56%), and proliferative (63 studies; 1.20%) disease. The prevalence rates between each county evaluated varied significantly ($p<0.001$; range [17.2% - 73.3%]). We evaluated factors that might explain the geographic differences of DR at screening by creating a scatter plot against the aforementioned four epidemiologic variable examined by the CDC. We found the coefficient of determinations for lines of best fit were greatest for incidence of DM ($R^2 = 0.92$), followed by DM prevalence ($R^2 = 0.79$), obesity prevalence, ($R^2 = 0.67$), and physical inactivity ($R^2 = 0.34$).

CONCLUSION The prevalence of DR in endocrinology practices across the US using the IRIS telemedicine platform was 34%. Screening in counties with a higher incidence of DM led to a higher prevalence of identified DR at time of screening ($R^2 = 0.92$). While additional studies are needed, the current work suggests counties with a higher incidence of DM may derive greater benefit of telemedicine screening.



HUMAN RESEARCH This study involves human research.

IRB Approval Status: Approved by institutional review board