ARTÍCULO DESTACADO DEL MES

Evaluation of a Myopic Normative Database for Analysis of Retinal Nerve Fiber Layer Thickness

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COMENTARIOS

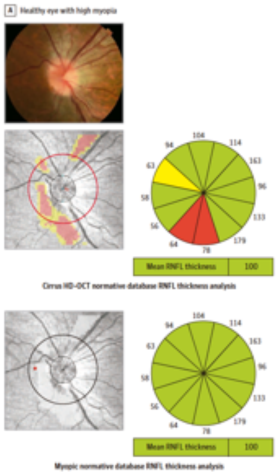
Detectar cambios en el nervio óptico de un miope alto es un reto para el oftalmólogo. Cuando evaluamos las papilas de pacientes miopes altos (>6 Dioptrías o > 26,5 mm de longitud axial) es fácil que nos encontremos con alteraciones en la morfología de la papila como pueden ser papilas oblicuas, macropapilas o alteraciones peripapilares en forma de estafilomas o zonas de atrofia peripapilar asociadas en muchos casos a una alteración en la disposición de la capa de fibras nerviosas.

Todo ello nos dificulta la valoración de la papila, y poder detectar en ella cambios de origen glaucomatoso así como el análisis de la capa de fibras nerviosas mediante técnicas de imagen.

La aparición del OCT y la detección de las alteraciones en la capa de fibra nerviosas nos han permitido un mejor diagnostico y seguimiento de la mayoría de nuestros pacientes. No obstante, no están incluidos en la base de datos de muchos tomógrafos de coherencia óptica (la media de error refractivo en el HD-Cirrus es de -0,82D), y debemos tener también en cuenta que los pacientes con alta miopía presentan una capa de fibras nerviosas de menor grosor cuanto mayor es su longitud axial.

Con esta base comparativa de miopes altos del estudio, se consigue mejorar la especificidad de un 63%-100% respecto al 8,7%-87% de la base de pacientes del HD-Cirrus.

Es por ello, que tiene mucha importancia ampliar y desarrollar la base datos de pacientes con elevada miopía, lo que nos permitiría mejorar la especificad de la prueba sin disminuir la sensibilidad de la misma.



JAMA Ophthalmol. 2016 Sep 1;134(9):1032-9.

Comentario realizado por el **Dr. Navero**. Instituto Catalán de la Retina (Barcelona).

ABSTRACT

IMPORTANCE

Analysis of retinal nerve fiber layer (RNFL) abnormalities with optical coherence tomography in eyes with high myopia has been complicated by high rates of false-positive errors. An understanding of whether the application of a myopic normative database can improve the specificity for detection of RNFL abnormalities in eyes with high myopia is relevant.

OBJECTIVE

To evaluate the diagnostic performance of a myopic normative database for detection of RNFL abnormalities in eyes with high myopia (spherical equivalent, -6.0 diopters [D] or less).

DESIGN, SETTING, AND PARTICIPANTS

In this cross-sectional study, 180 eyes with high myopia (mean [SD] spherical equivalent, -8.0 [1.8] D) from 180 healthy individuals were included in the myopic normative database. Another 46 eyes with high myopia from healthy individuals (mean [SD] spherical equivalent, -8.1 [1.8] D) and 74 eyes from patients with high myopia and glaucoma (mean [SD] spherical equivalent, -8.3 [1.9] D) were included for evaluation of specificity and sensitivity. The 95th and 99th percentiles of the mean and clock-hour circumpapillary RNFL thicknesses and the individual superpixel thicknesses of the RNFL thickness map measured by spectral-domain optical coherence tomography were calculated from the 180 eyes with high myopia. Participants were recruited from January 2, 2013, to December 30, 2015. The following 6 criteria of RNFL abnormalities were examined: (1) mean circumpapillary RNFL thickness below the lower 95th or (2) the lower 99th percentile; (3) one clock-hour or more for RNFL thickness below the lower 95th or (4) the lower 99th percentile; and (5) twenty contiguous superpixels or more of RNFL thickness in the RNFL thickness map below the lower 95th or (6) the lower 99th percentile.

MAIN OUTCOMES AND MEASURES

Specificities and sensitivities for detection of RNFL abnormalities.

RESULTS

Of the 46 healthy eyes and 74 eyes with glaucoma studied (from 39 men and 38 women), the myopic normative database showed a higher specificity (63.0%-100%) than did the built-in normative database of the optical coherence tomography instrument (8.7%-87.0%) for detection of RNFL abnormalities across all the criteria examined (differences in specificities between 13.0% [95% CI, 1.1%-24.9%; $P = .01$] and 54.3% [95% CI, 37.8%-70.9%; $P < .001$]) except for the criterion of mean RNFL thickness below the lower 99th percentile, in which both normative databases had the same specificities (100%) but the myopic normative database exhibited a higher sensitivity (71.6% vs 86.5%; difference in sensitivities, 14.9% [95% CI, 4.6%-25.1%; $P = .002$]).

CONCLUSIONS AND RELEVANCE

The application of a myopic normative database improved the specificity without compromising the sensitivity compared with the optical coherence tomography instrument's built-in normative database for detection of RNFL abnormalities in eyes with high myopia. Inclusion of myopic normative databases should be considered in optical coherence tomography instruments.