A century and a half ago, Herman Snellen, developed a chart for vision testing. This chart has been adopted worldwide and is widely used since then. Although the computer age has encouraged the development of new approaches and platforms to measure visual acuity, they mainly reflect the original Snellen charts and they do not pose a genuine novel approach for acuity tests. Recently, a new chart using a dynamic target visual assessment tool was developed. This chart, called the Dynamic Optotype chart (DYOP) uses a segmented, circular figure composed of equally spaced gaps/segments that spin at a constant velocity.

Our study goal was to evaluate the DYOP chart. Children were tested with the DYOP visual acuity test and the ETDRS Lea numbers chart. The results of both tests were compared.

Introduction

A strong linear correlation (r = 0.88) between the visual acuity measures was found. The mean difference in acuity was -0.01 (95%, CI) -0.02 to 0.01. The 95% limits of agreement were ±1.2 lines. The logMAR, equivalent was about 1 letter. The DYOP test underestimated vision (not clinically significant) relative to the Lea numbers ETDRS chart. The results of this study, the first prospective study in pediatric population, support the DYOP eye chart as a valid measure of visual acuity among pediatric patients 4 to 17 years of age, with vision ranging from 20/16 to 20/200.

References

(4) Harris P. Validation of the DYOP Acuity Test, ARVO annual meeting, 2015.

Conclusions

• A strong linear correlation (r =0.88) between the visual acuity measures was found . The mean difference in acuity was -0.01 (95%,CI) -0.02 to 0.01.
• The 95% limits of agreement were ±1.2 lines. The logMAR, equivalent was about less than 1 letter.
• The DYOP test underestimated vision (not clinically significant) relative to the Lea numbers ETDRS chart.
• The results of this study, the first prospective study in pediatric population, support the DYOP eye chart as a valid measure of visual acuity among pediatric patients 4 to 17 years-of-age, with vision ranging from 20/16 to 20/200.

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