Abstract 226

UTILIZATION OF AUTOMATED DEEP LEARNING APPROACH TOWARDS DETECTION OF OCULAR TOXOPLASMOSIS USING FUNDUS PHOTOGRAPHS

Oral

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Purpose:

To develop a deep learning algorithm without coding for differentiation of Ocular Toxoplasmosis (OT) fundus images from a normal fundus image.

Methods:

A total of 552 OT patient images from Argentina, Turkey, and USA were compared to 130 healthy images extracted from public datasets. A deep learning model using the Auto ML vision platform from Google LLC (Menlo Park, CA) was trained using 441 OT and 103 normal images followed by validation using 54 OT and 12 normal images. The model was then tested using 57 OT and 15 normal images. Area under the precision-recall curve (AUPRC) was plotted and sensitivity, specificity, positive predictive value (PPV), and accuracy (C) were calculated.

Results:

AUPRC was found to be 0.97. The sensitivity, specificity, PPV, and AC of the model were 96.5%, 100%, 100%, and 97%.

Conclusions:

Clinician-derived automated machine learning model developed without coding was able to differentiate OT from normal images. This has the potential to be developed further to aid physicians in the diagnosis of OT.