

August 26-27,2021 Webinar World Medical Conference on EYE AND VISION & WORLD PHARMACEUTICAL SCIENCES & DRUG DELIVERY & EURD MICROBIOLOGY & NOVEL CORONA VIRUS DISEASES

Pterygium Updates: Comprehensive Morphological Evaluation Using Anterior Segment Imaging

Mohd Radzi Hilmi International Islamic University Malaysia (IIUM), MY



Abstract:

Statement of the Problem: Pterygium is a common but yet difficult to predict its progression. Diagnosis, especially with small fibrovascular tissue and wide ranges of clinical signs and symptoms somehow leads to inconclusive management of pterygium. First line treatments often include ophthalmic approaches and surgical excision. However, it is worth to note that some pterygium cause visual disturbance while some are not. Thus, needs of specificity in treatment and prediction of pterygium progression is important. At IIUM Optometry Clinic, we team up with a consultant ophthalmologist in developing a software that combines six (6) pterygium morphologies: redness, thickness, corneo-pterygium size, fibrovasular tissue weight and its length, on top of the pterygium translucence appearance (types of pterygium), known as Pterygium Redness Grading Software (PRGS). Findings revealed that redness appearance in combination with fibrovascular tissue weight leads to highest changes in oculovisual function. Thus, treatment plans should include all five (5) pterygium morphologies in determining the progression of pterygium. Types of pterygium should be put into consideration in predicting the changes as signifies inflammatory and fibroblast activation which leads to pterygium fibrovascular tissue growth. The impact of pterygium translucence in combination with all pterygium morphologies would assist us to have better understanding on how the anterior corneal surface change when pterygium progresses.

Conclusion & Significance: With the new approach available, better diagnosis and management can be prescribed not just for pterygium patients but also in managing irregular cornea.

Recent Publications

Che Arif FA, Hilmi MR, Kamal MK, Ithnin MH (2020). Evaluation of 18 Artificial Tears Based on Viscosity and pH, Malaysian Journal of Ophthalmology, 2(2): 96 - 111. Hilmi MR, Khairidzan MK, Ariffin AE. Norazmar NA, Maruziki NN, Musa NH, Nasir MS, Azemin MZC, Azami MH, Abdul Rahim MAS (2020). Effects of Different Types of Primary Pterygium on Changes in Oculovisual Function, Sains Malaysiana, 49(2):383-388.

Hilmi MR, Che Azemin MZ, Khairidzan MK, Ariffin AE, Abdul Rahim MAS, Mohd Tamrin MI (2020). Reliability of Pterygium Redness Grading Software (PRGS) in describing different types of primary pterygia based on appearance. Sains Malaysiana, 49(5):1015-1020.

Ahmad NAA, Muziman MSMM, Fadzilah HR, Nadhirah AF, Khairidzan MK, **Mohd Radzi H** (2020). Correlation of visual recovery time after laser refractive surgery with preoperative keratometry and astigmatism among myopic astigmatism patients. International Journal of Allied Health Sciences, 4 (1):1028-1041

Noor Syahira CR, **Mohd Radzi H**, Khairidzan MK, Muziman MSMM (2020). Association of net pterygium tissue mass (dryweight) in determining changes in oculovisual functions and anterior corneal curvature relative to pterygium types. International Journal of Allied Health Sciences, 4 (1):1042-1048.

Siti Nursyahirah K, Firdaus YA, Nadia NS, Mohd Syafiq HO, Shahirah A, **Mohd Radzi H**, Norsham A (2020). The prevalence of pterygium andpinguecula in a clinic population. International Journal of Allied Health Sciences, 4 (1):1000-1010.

Rosmadi NI, Yusoff NHD, **Hilmi MR**, Khairidzan MK, Ithnin MH (2019). The measurement of lower tear meniscus height using anterior segment digital imaging and cartography. Journal of Optometry, Eye and Health Research (JOEHR), 1(1):49-54.

August 26-27,2021 Webinar

World Medical Conference on EYE AND VISION & WORLD PHARMACEUTICAL SCIENCES & DRUG DELIVERY & EURD MICROBIOLOGY & NOVEL CORONA VIRUS DISEASES

Hilmi MR, Khairidzan MK, Azemin MZC, Ariffin AE. (2019). Measurement of Pterygium Tissue Dry Weight Using Two Different Tissue Preparation Techniques in Freeze-Dry Method, Sains Medika, in press

Hilmi MR, Khairidzan MK, Azemin MZC, Ithnin MH. (2019). Tear Film and Lid Margin Changes in Patients with Different Types of Primary Pterygium, Sains Medika, in press

Hilmi MR, Khairidzan MK, Azemin MZC, Azami MH, Ariffin AE. (2019). Corneo-pterygium Total Area Measurements Utilizing Image Analysis Method, J Optom, 12(4): 272 - 277.

Hilmi MR, Khairidzan MK, Ithnin MH, Azami MH. (2019). Comparison Between Tear Ferning Pattern, NIKBUT, TFBUT and Schirmer I Test in Normal and Primary Pterygium Eyes, La Clinica Terapeutica, in press

Hilmi MR, Khairidzan MK, Zulfaezal MZC, Ithnin MH, Mustafa MMSM, Yusof@Alias F, Ahmad N. Corneal Curvature Measurements Utilizing a New Swept-source Optical Coherence Tomography Tomey OA-2000® and Comparison With IOL Master® 500 in Pterygium Patients. Sains Medika 2018 Jan u ar y-Ju n e;9(1):d o i :http ://d x. d o i . o rg /10. 26532/ sainsmed.v9i1.2918

Hilmi MR, Khairidzan MK, Azemin MZC, Azami MH, Ariffin AE. Measurement of Contrast Sensitivity Using the M&S Smart System II Compared with the Standard Pelli–Robson Chart in Patients with Primary Pterygium. Makara J Health Res 2018 Dec;22(3):167-171.

Mohd Radzi H, Mohd Zulfaezal CA, Khairidzan MK, Mohd Izzuddin MT, Norfazrina AG, Tengku Mohd TS. Prediction of changes in visual acuity and contrast sensitivity function by tissue redness after pterygium surgery. Curr Eye Res. 2017;42:852–856.

Che Azemin MZ, Mohd Tamrin MI, **Hilmi MR**, Mohd Kamal K. Inter-grader reliability of a supervised pterygium redness grading system. Adv Sci Lett 2016;22(10):2885-2888. ISSN 1936-6612 Che Azemin MZ, Mohd Tamrin MI, **Hilmi MR**, Mohd Kamal K. GLCM texture analysis on different color space for pterygium grading. ARPN J Eng Appl Sci. 2015;10:6410–6413.

Azemin MZC, **Hilmi MR**, Kamal MK. Supervised pterygium fibrovascular redness grading using generalized regression neural network. In Fujita H (Ed). New Trends in Software Methodologies, Tools and Techniques (pp. 650–656). Amsterdam: IOS Press; 2014.

Che Azemin MZ, **Hilmi MR**, Mohd Tamrin MI, Mohd Kamal K. Fibrovascular redness grading using Gaussian process regression with radial basis function kernel. In Biomedical Engineering and Sciences (IECBES), 2014 IEEE Conference on 2014 Dec 8 (pp. 113–116). IEEE.

Biography

Dr Mohd Radzi Hilmi obtained his Optometry degree from International Islamic University Malaysia (IIUM) in 2010 and completed his Master's degree in Optometry (2011) from University of New South Wales (UNSW), Sydney, Australia. In 2016, he completed his PhD in Optometry at IIUM and officially joined IIUM. During his PhD stint, 6 indexed journals were published and he was awarded Best Student for PhD in IIUM Convocation 2017. Dr Radzi's team successfully develop software known as Pterygium Redness Grading Software (PRGS) which won the Silver Medal in International Innovation and Research Exhibition in 2015. He also had authored 30 publications in peer-reviewed journals and holds 10 intellectual copyrights to date. He also reviewer for 3 International peer-reviewed journals. His research interest is mainly on the irregular cornea, ocular surface and anterior segment imaging. Presently, He is an Assistant Professor at Department of Optometry and Visual Science and Consultant Optometrist for Optometry Clinic for Irregular Cornea (OCIC) service in IIUM.

mohdradzihilmi@iium.edu.my