

**Recent modalities in qualitative and quantitative assessment of
macular dysfunction in medical retinal diseases**

Essay

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Introduction

Recent advances in biophysics made clinical approaches to macular diseases to have a comprehensive dimension. Better imaging participates in better understanding of both pathology and pathophysiology of the macular diseases.

This essay will include review of literature in the following issues:

- Macular topography and histology.
- Macular pathologies.
- Macular pathophysiological background of different diseases.
- Investigational tools:
 - Fundus fluorescein angiography
 - Indocyanine green angiography
 - Fundus auto-fluorescence
 - Optical coherence tomography
 - Retinal thickness analyzer
 - Multifocal electroretinogram

Aim of the work

This work aims at reviewing different medical macular diseases and the future trends in technologies for their diagnosis and the follow-up of their management.

LIST OF ABBREVIATIONS

ó	µm	Micrometer
ó	3D	Three dimensional
ó	AMD	Age-Related Macular Degeneration
ó	AZOOR	Acute Zonal Occult Outer Retinopathy
ó	CCD	Charge-coupled device
ó	CME	Cystoid macular edema
ó	CNV	Choroidal neovascularization
ó	cSLO	Confocal scanning laser ophthalmoscopy
ó	CSR	Central Serous Chorioretinopathy
ó	DS-ICG(A)	Digital subtraction-indocyanine green (Angiography)
ó	ELM	External limiting membrane
ó	EM	Electron microscopy
ó	ERG	Electroretinogram
ó	ERM	Epiretinal membrane
ó	FAF	Fundus autofluorescence
ó	FFA	Fundus fluorescein angiography
ó	Fig	Figure
ó	FV	Feeder vessel
ó	ICG(A)	Indocyanine green(Angiography)
ó	ILM	Internal limiting membrane
ó	INL	Inner nuclear layer
ó	IPL	Inner plexiform layer
ó	IRMA	Intraretinal Microvascular Abnormalities
ó	IS/OS	Inner segment/Outer segment
ó	LF	Lipofuscin

LIST OF ABBREVIATIONS

ó	MCDR1	Macular dystrophy, retinal subtype, first one mapped
ó	MEWDS	Multiple evanescent white dot syndrome
ó	MFC	Multifocal choroiditis
ó	mfERG	Multifocal Electroretinogram
ó	mm ²	Square millimeter
ó	nm	Nanometer
ó	NPDR	Non proliferative diabetic retinopathy
ó	OCT	Optical coherence tomography
ó	ONL	Outer nuclear layer
ó	OPL	Outer plexiform layer
ó	PDR	Proliferative diabetic retinopathy
ó	PDT	Photodynamic therapy
ó	PED	Pigment epithelial detachment
ó	RNFL	retinal nerve fiber layer
ó	RPCs	Radial peripapillary capillaries
ó	RPE	Retinal pigment epithelium
ó	RTA	Retinal thickness analyzer
ó	SLO	Scanning laser ophthalmoscope

TABLE OF CONTENT

List of abbreviations	IV
Table of content	VI
Table of figures.....	XII

Chapter 1: Macular topography and histology

• Introduction	3
• Centre of the macula: UMBO	3
• Foveola	5
• Fovea	6
• Parafovea	7
• Perifovea	7
• Blood supply of the retina.	7
• Phototransduction and visual processing.....	9

Chapter 2: Histopathological review of different macular diseases

• Introduction	13
• Age-Related Macular Degeneration (ARMD)	13
• Degenerative Myopia	14
• Choroidal neovascular membrane	15
• Central Serous Chorioretinopathy (CSR)	16
• Macular Hole	17
• Epiretinal Membrane	19
• Vitreomacular Traction Syndrome	20
• Diabetic retinopathy	21
• Cystoid Macular Edema	22
• Angioid Streaks	23

TABLE OF CONTENT

• Multiple Evanescent White Dot Syndrome (MEWDS) and Multifocal Choroiditis (MFC)	25
• Acute Zonal Occult Outer Retinopathy (AZOOR)	25
• Macular Dystrophies	26
• I. Stargardt's disease	26
• II. Best's disease and vitelliform dystrophy	27
• III. Adult vitelliform degeneration	28
• IV. Familial drusen	28
• V. Pattern dystrophy	29
• VI. North Carolina macular dystrophy	29
• VII. Cone degeneration	30

Chapter 3: Fundus fluorescein angiography

• Fluorescein Angiography	33
• Fluorescein dye and Blood-Ocular Barriers	34
• SLO and fluorescein angiography	35
• Normal fluorescein angiography	36
• Pathological fluorescein angiography	39
• FFA findings in common macular diseases	41
• I. Age-Related Macular Degeneration in FFA	41
• II. CNV in FFA	42
• III. Degenerative myopia in FFA	43
• IV. Central Serous Chorioretinopathy in FFA	44
• V. Angioid streaks in FFA	45
• VI. Macular Hole in FFA	46
• VII. Cystoid Macular Edema in FFA	46
• VIII. Stargardt's disease in FFA	47
• IX. Best's disease and vitelliform dystrophy in FFA	48
• X. Pattern dystrophy in FFA	49

TABLE OF CONTENT

• XI. Epiretinal membrane in FFA	49
• Oral Fluorescein Angiography	50
• Side effects of fluorescein angiography	50

Chapter 4: indocyanine green angiography

• Introduction	55
• Historical review	55
• New techniques in ICG angiography.....	56
• i. Contrast enhanced ICG angiography	56
• ii. Real time ICGA	57
• iii. Wide-Angle ICGA	57
• iv. Digital Subtraction-Indocyanine Green Angiography	58
• v. FV Therapy (feeder vessel therapy)	58
• vi. SLO and Indocyanine green (ICG) angiography	58
• vii. Simultaneous Fluorescein and Indocyanine Green Angiography	59
• Normal ICG Angiography	60
• Pathological fluorescein angiography in different macular diseases	61
• I. CNV in ICG	61
• II. Age-Related Macular Degeneration in ICG	62
• III. Central Serous Chorioretinopathy in ICG	63
• IV. Angioid streaks in ICG	64
• V. Disciform Scarring in ICG	65
• Complications of ICG	65

Chapter 5: Fundus autofluorescence

• Fundus autofluorescence (FAF) imaging.....	69
• SLO and modified fundus photography in FAF.....	69

TABLE OF CONTENT

• Normal fundus autofluorescence	70
• Fundus autofluorescence typical findings	71
• I. Age-Related Macular Degeneration in FFA	72
• II. Central Serous Chorioretinopathy in FAF	73
• III. Cystoid Macular Edema in FAF	74
• IV. Angioid streaks in FAF	74
• V. Stargardt's disease in FAF	75
• VI. Best's disease in FAF	75
• VII. Pattern dystrophy in FAF	76
• VIII. Epiretinal membrane in FAF.....	76
• IX. Macular Holes in FAF	77

Chapter 6: Optical coherence tomography

• Introduction	81
• Optical coherence tomography and the retina	82
• OCT in different macular diseases	85
• I. CNV	85
• II. Scar stage of ARMD	87
• III. Macular holes	88
• IV. Epiretinal membranes	90
• V. CSR	91
• VI. RPE detachment	92
• VII. Cystoid Macular Edema	92
• VIII. Foveoschisis	94
• IX. Vitreomacular traction syndrome	94

TABLE OF CONTENT

Chapter 7: Retinal thickness analyzer

• Introduction	81
• Optical coherence tomography and the retina	82
• OCT in different macular diseases	85
• I. CNV	85
• II. Scar stage of ARMD	87
• III. Macular holes	88
• IV. Epiretinal membranes	90
• V. CSR	91
• VI. RPE detachment	92
• VII. Cystoid Macular Edema	92
• VIII. Foveoschisis	94
• IX. Vitreomacular traction syndrome	94

Chapter 8: Multifocal Electroretinogram

• Introduction	109
• Description of multifocal electroretinography	109
• Technique and Normal Recordings	110
• Clinical Applications	113
• I. ARMD	113
• II. Central serous chorioretinopathy	114
• III. Chloroquine and Hydroxychloroquine Retinopathy.	115
• IV. Stargardt's dystrophy.	116
• V. Retinitis Pigmentosa	117
• VI. Epiretinal Membrane	119
• VII. White Dot Syndrome.	120

TABLE OF CONTENT

<u>Summary</u>	121
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<u>References</u>	127
--------------------------------	-----

<u>الملخص العربي</u>	
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TABLE OF FIGURES

Chapter 1: Macular topography and histology

- Fig 1.1 Normal fundus with macula encompassed by major vascular arcades “Yanoff 2004” 3
- Fig 1.2 Umbo (center) and foveola “Yanoff 2004”..... 4
- Fig 1.3 blood supply of the retina webeye.ophth.uiowa.edu/dept/aion/images/fig24.htm 7
- Fig 1.4 Foveal avascular zone www.oft.gu.se/aioindex.html 8
- Fig 1.5 Corrosion cast of the upper back of the human eye with the sclera removed. VV= vortex vein. www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=webvision&part=A34&rendertype=figure&id=A71.....

Chapter 2: Histopathological review of different macular diseases

- Fig. 2.1 fundus pictures of both types of ARMD “2009 RelayHealth and/or its affiliates”13
- Fig. 2.2 fundus pictures of degenerative myopia dro.hs.columbia.edu/degmyopia2.htm14
- Fig. 2.3 Illustrated and FFA picture of the CNV <http://www.cesil.com/dicembre00/immagini/10stfig9.gif>”15
- Fig. 2.4 OCT image of CSR. “www.rvscny.com/csr-oct.jpg”17
- Fig. 2.5 Clinical photo and cross section of a macular hole “www.avclinic.com/Macular_hole3.gif”18
- Fig. 2.6 fundus photograph showing macular pucker “www.salemretina.com/info/disease/epiretinal_membrane/index_clip_image001.jpg”19
- Fig. 2.7 OCT picture showing Vitreomacular Traction Syndrome contributing to macular edema

TABLE OF FIGURES

“www.retinalphysician.com/archive%5C2007%5CMay%5Cimages/figure7.jpg”	20
• Fig. 2.9 Very sever NPDR “Courtesy of Dar El Oyouun Hospitals”	22
• Fig. 2.10 PDR “Courtesy of Dar El Oyouun Hospitals”	22
• Fig. 2.8 Moderate NPDR “Courtesy of Dar El Oyouun Hospitals”	22
• Fig. 2.11 FAF image of CME “www.heidelbergengineering.com/wp-content/uploads/infrared-cystoid-macular-edema1.jpg”	22
• Fig. 2.12 Color fundus photograph and FFA of angiod streak “www.nature.com/.../n12/fig_tab/6702278f1.html”	24
• Fig. 2.13 Color, FFA & OCT photographs of Stargardt’s “www.gfmer.ch/.../gendis_detail_list.php?cat3=522”	26
• Fig. 2.14 photographs of Best's disease. http://www.optovue.com/wp-content/uploads/bests-disease.jpg	27
• Fig. 2.15 FFA Familial drusen “www.dcmsonline.org/.../sept2000/riskfactors.htm”	28

Chapter 3: Fundus fluorescein angiography

• Fig. 3.2 Schematic View of Fundus Camera “Ophthalmic photography”	33
• Fig. 3.1 Schematic diagram of Fundus Camera “AAO 2003-2004”	33
• Fig. 3.3 Fluorescein Molecule “sciencechicagoblog.com/2009/03/17/”	34
• Fig. 3.4 Schematic View of Blood-Ocular Barrier “www.ocular-angiogenesis.nl/BRB/BRB.html”	34
• Fig. 3.5 Schematic View of SLO mechanism of image acquisition. “Dithmar, 2008”	35
• Fig. 3.7 Arterial Phase “courtesy of Dar El Oyouun Hospitals”	37
• Fig. 3.6 Choroidal Phase. “Courtesy of Dar El Oyouun Hospitals”	37
• Fig. 3.8 Early Arteriovenous Phase “Courtesy of Dar El Oyouun Hospitals”	38
• Fig. 3.9 mid Arteriovenous “Courtesy of Dar El Oyouun Hospitals”	38
• Fig. 3.11 Late Phase “Courtesy of Dar El Oyouun Hospitals”	39
• Fig. 3.10 Recirculation phase “Courtesy of Dar El Oyouun Hospitals”	39
• Fig. 3.12 Drusen “Dithmar, 2008”	41

TABLE OF FIGURES

• Fig. 3.13 Geographic RPE atrophy “www.kenteyesurgery.co.uk/a-z-of-eyes-view.php...”	41
• Fig. 3.14 Red-Free and Fluorescein Angiogram of myopic CNV (black arrows) “Courtesy of Dar El Oyoun Hospitals”	42
• Fig. 3.15 Degenerative Myopia “Courtesy of Dar El Oyoun Hospitals”	43
• Fig. 3.16 CSCR in FFA showing smoke stack sign “Dithmar, 2008”	44
• Fig. 3.17 CSCR in FFA showing multiple inkblot sign “Courtesy of Dar El Oyoun Hospitals”	44
• Fig. 3.18 Angioid Streaks (black arrows) “Courtesy of Dar El Oyoun Hospitals”	45
• Fig. 3.19 Macular Hole “Courtesy of Dar El Oyoun Hospitals.....	46
• Fig. 3.20 Cystoid Macular Oedema “Dithmar, 2008”	47
• Fig. 3.21 Stargardt’s Diseases (black arrow) “Courtesy of Dar El Oyoun Hospitals”	48
• Fig. 3.22 Best’s Diseases “Dithmar, 2008”	48
• Fig. 3.24 Epiretinal Membranes in FFA. “Dithmar, 2008”	49
• Fig. 3.23 Pattern Dystrophy “Dithmar, 2008”	49

Chapter 4 indocyanine green angiography

• Fig 4.1 Indocyanine green “Dithmar, 2008”	55
• Fig 4.2 Montage creation via software allows assemblage of wide-field images from any number of higher magnification frames. “Ozawa, 2009”	59
• Fig 4.3 FFA vs. ICG angiography “Dithmar, 2008”	60
• Fig 4.4 Phases of ICGA in CNVM “www.retinalphysician.com/article.aspx?article...”	61
• Fig 4.5 drusen don’t take up the ICG, they are not detectable during the study “Dithmar, 2008”	62
• Fig 4.6 CSR appearance in ICGA “Dithmar, 2008”	63
• Fig 4.7 angioid streaks appearance in ICGA “Dithmar, 2008”	64