

# Standard Treatment Workflow (STW) DIABETIC RETINOPATHY (DR)

## ICD-10-E11.31

### KEY POINTS

Diabetic retinopathy can be asymptomatic in early as well as advanced stages

Every newly diagnosed diabetic should be screened for retinopathy at the point of detection of diabetes and thereafter annually or more frequently as required by the retinopathy grade

### PRELIMINARY SCREENING

#### HISTORY

- Duration of diabetes.
- Compliance with treatment and blood sugar monitoring
- Any visual complaints
- Any other systemic illness



#### EXAMINATION

Vision, refraction, ophthalmic examination including pupillary reflexes, IOP, dilated fundus examination with a direct/indirect ophthalmoscope

### DEFINITIVE DIAGNOSIS

#### ESSENTIAL

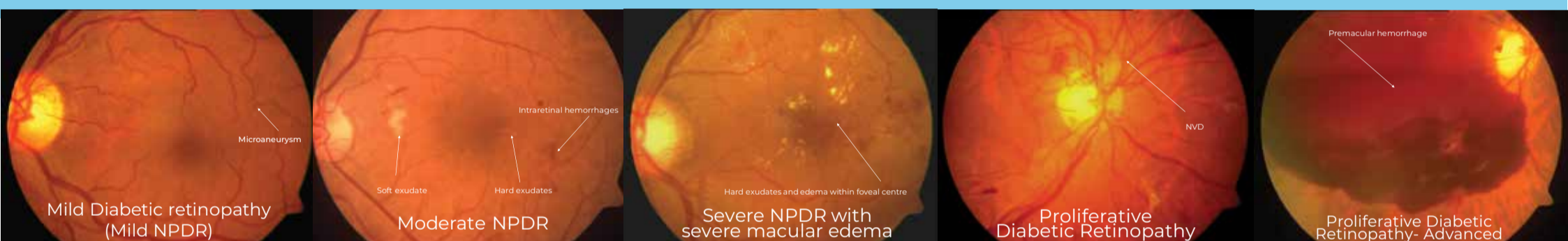
Slit lamp bio microscopy (retinal exam), ultrasound-B scan (when fundus not visible)

#### DESIRABLE

Indirect ophthalmoscopy  
Fundus photography

#### OPTIONAL

OCT, FFA, OCTA if indicated



**TABLE 1: CLASSIFICATION OF DIABETIC RETINOPATHY**

**TABLE 2: CLASSIFICATION OF DIABETIC MACULAR EDEMA**

DIABETIC RETINOPATHY	FINDINGS OBSERVABLE ON DILATED OPHTHALMOSCOPY	REFERRAL*
No Apparent retinopathy	No Abnormalities	
Mild non proliferative DR	Micro aneurysms only	Refer to retina specialist
Moderate non proliferative diabetic retinopathy	More than just micro aneurysms, but less than severe non proliferative DR	Refer to retina specialist
Severe non-proliferative DR	Any of the following: • Intra-retinal haemorrhages ( $\geq 20$ in each quadrant) • Definite venous beading (in 2 quadrants) • Intra retinal micro vascular abnormalities (in 1 quadrant) and • No signs of proliferative retinopathy	Refer to retina specialist
Proliferative DR	Severe non proliferative DR and 1 or more of the following: • Neovascularization • Vitreous/ pre retinal haemorrhage	Refer to retina specialist

DIABETIC MACULAR OEDEMA	FINDINGS OBSERVABLE ON DILATED OPHTHALMOSCOPY	REFERRAL*
DME Absent	No retinal thickening or hard exudates in posterior pole	Review in 1 year
DME Present	Retinal thickening or hard exudates in posterior pole	Refer to retina specialist
Mild DME	Retinal thickening or hard exudates in posterior pole but outside the central subfield of the macula (diameter 1000 $\mu$ m)	Refer to retina specialist
Moderate DME	Retinal thickening or hard exudates within the central subfield of the macula but not involving the centre point	Refer to retina specialist
Severe DME	Retinal thickening or hard exudates involving the centre of the macula	Refer to retina specialist

#### INDICATIONS FOR URGENT REFERRAL

- Vision loss
- Hard exudates
- Haemorrhages
- Non - dilating pupil
- Blurred disc margins
- No view of fundus
- Absent Foveal Reflex

### MANAGEMENT

#### PHC/PRIMARY LEVEL

- Detailed history & examination
- Refraction for BCVA
- Preliminary diagnosis
- Referral to Ophthalmologist (as per Table no. 1 and 2)
- Counselling regarding metabolic control
- Preventive advice, counselling and regular follow up

#### SECONDARY LEVEL

- Refraction for BCVA
- Detailed work up including indirect ophthalmoscopy
- Diagnose, classify, advice (as per Table no. 1 and 2)
- Point to point guided referral
- Ensure follow up and compliance
- Counselling regarding metabolic control and systemic comorbidities (hypertension, and nephropathy)

#### TERTIARY LEVEL

- Diagnose, classify, advice (as per Table no. 1 and 2)
- Intravitreal injections/laser photocoagulation/vitreoretinal surgery
- Ensure postoperative follow up and compliance including collaboration with district hospital ophthalmologists
- Counselling regarding metabolic control

#### INDICATION FOR SURGERY

- Sudden vision loss
- Clinically recognizable macular edema
- Rubeosis iridis
- Proliferative DR

#### FITNESS FOR SURGERY:

- General health stable
- BP  $\leq$  150/90mm Hg
- Blood sugar (mg/dl) FBS < 140, PPBS < 180 / RBS < 200

**INTERVENTION:** Pre-op topical broad spectrum antibiotics, QID for 1-3 days

**SURGICAL PREPARATION:** Periocular cleaning with 10% povidone iodine followed by instillation of 5% povidone iodine in conjunctival sac, rinse after 3 minutes, wipe, aseptic precautions, Sterile surgical eye drape

#### QUALITY ASSESSMENT PARAMETERS

- Patient identifier, age/ gender
- Grade of DR
- Pre operative vision, diagnosis
- Follow up vision

### ABBREVIATIONS

**BCVA:** Best corrected visual acuity  
**DME:** Diabetic macular edema

**FFA:** Fundus fluorescein angiography  
**IOP:** Intra ocular pressure

**OCT:** Optical coherence tomography  
**OCTA:** Optical coherence tomography angiography

### REFERENCE

1. Guidelines for diabetic care in India, International Council of Ophthalmology, January 2015 ([https://www.iapb.org/wp-content/uploads/ICO-Guidelines-for-Diabetic-Eye-Care-Adapted-to-India\\_VISION-2020-India.pdf](https://www.iapb.org/wp-content/uploads/ICO-Guidelines-for-Diabetic-Eye-Care-Adapted-to-India_VISION-2020-India.pdf))

### KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit the website of DHR for more information: ([stw.icmr.org.in](http://stw.icmr.org.in)) for more information.  
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