

Electronic Supplementary Materials

ESM Table 1. Diabetic Retinopathy Classifications of Progression to PDR

ETDRS final Scale	ETDRS (Final) Grade	Lesions	'International' Clinical Classification	English Screening Programme
No apparent retinopathy	10 14, 15	DR absent DR questionable		R0 Currently screen Annually
Mild NPDR	20	Micro aneurysms only	Ma's only	R1
	35 a b c d e	≥1 of the following: Venous loops ≥ definite in 1 field SE, IRMA, or VB questionable Retinal haemorrhages present HE ≥ definite in 1 field SE ≥ definite in 1 field	More than just micro aneurysms but less severe than Severe NPDR	Screen annually Background microaneurysm(s) Retinal haemorrhage(s) ± any exudate
Moderate NPDR	43a b	H/Ma moderate in 4-5 fields or severe in 1 field or IRMA definite in 1-3 fields		R2 Refer to ophthalmologist
Moderately severe NPDR	47 a b c d	Both level 43 characteristics – H/Ma moderate in 4-5 fields or severe in 1 field and IRMA definite in 1-3 fields or any one of the following: IRMA in 4-5 fields HMA severe in 2-3 fields VB definite in 1 field	Severe NPDR Any of the following: a) Extensive intraretinal haem (>20) in 4 quadrants b) Definite venous beading in 2+ quadrants c) Prominent IRMA in 1+ quadrant <u>And</u> no signs of PDR	Pre-proliferative venous beading intraretinal microvascular abnormality (IRMA) multiple deep, round or blot haemorrhages
Severe NPDR	53 a b c d	≥1 of the following: ≥ 2 of the 3 level 47 characteristics H/Ma severe in 4-5 fields IRMA ≥ moderate in 1 field VB ≥ definite in 2-3 fields		
Mild PDR	61a b	FPD or FPE present with NVD absent or NVE = definite		R3 Urgent referral to ophthalmologist
Moderate PDR	65a b	1) NVE ≥ moderate in 1 field or definite NVD with VH and PRH absent or questionable or 2) VH or PRH definite and NVE < moderate in 1 field and NVD absent	Neovascularisation Vitreous / preretinal haemorrhage	Proliferative
High risk PDR	71 a b c d	Any of the following: 1) VH or PRH ≥ moderate in 1 field 2) NVE ≥ moderate in 1 field and VH or PRH definite in 1 field 3) NVD = 2 and VH or PRH definite in 1 field 4) NVD ≥ moderate		new vessels on disc (NVD) new vessels elsewhere (NVE) pre-retinal or vitreous haemorrhage pre-retinal fibrosis ± tractional retinal detachment
High risk PDR	75	NVD ≥ moderate and definite VH or PRH		
Advanced PDR	81	Retina obscured due to VH or PRH		

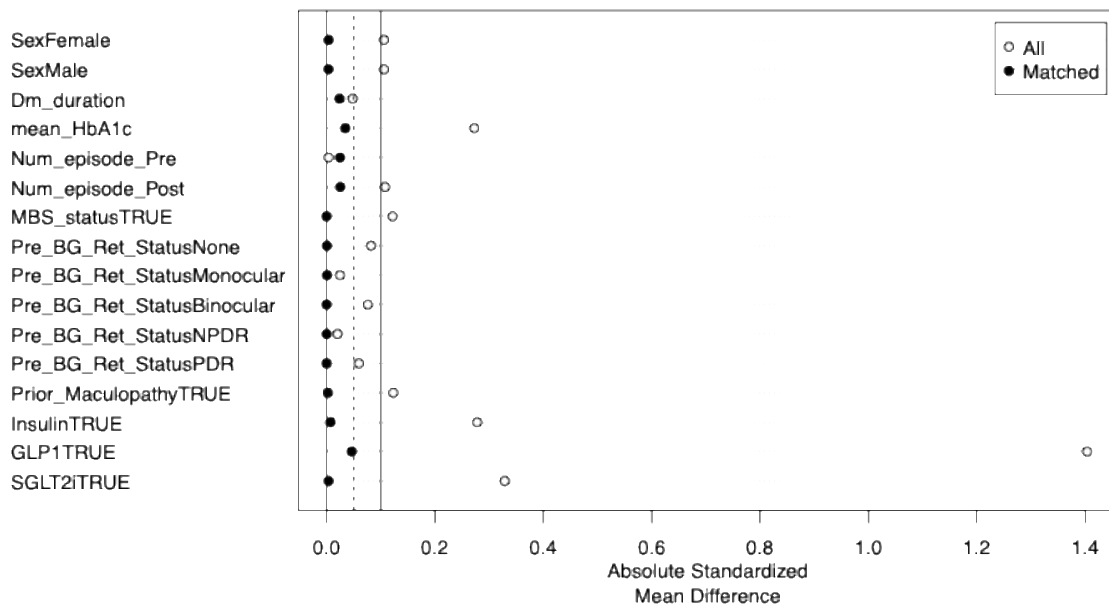
ESM Table 2. Maculopathy Classification

Early Treatment Diabetic Retinopathy Study	International classification	English Classification	Grade in the English NHS DESP
		Absence of features below	M0
	Diabetic Macular Oedema Present as defined by some retinal thickening or hard exudates in the posterior pole and subclassified into: Mild Diabetic Macular Oedema: Some retinal thickening or hard exudates in the posterior pole but distant from the macula	Circinate or group of exudates within the macula (The macula is defined as that part of the retina which lies within a circle centred on the centre of the fovea whose radius is the distance between the centre of the fovea and the temporal margin of the disc)	M1
		Any microaneurysm or haemorrhage within 1DD of the centre of the fovea only if associated with a best VA of $\leq 6/12$ (if no stereo)	M1
Clinically significant macular oedema as defined by:	Moderate diabetic macular oedema: Retinal thickening or hard exudates approaching the centre of the macula but not involving the centre	Exudate within 1 disc diameter (DD) of the centre of the fovea	M1
A zone or zones of retinal thickening one disc area or larger, any part of which is within one disc diameter of the centre of the macula.		Retinal thickening within 1DD of the centre of the fovea (if stereo available)	M1
Retinal thickening at or within 500 microns of the centre of the macula	Severe diabetic macular oedema: Retinal thickening or hard exudates involving the centre of the macula		
Hard exudates at or within 500 microns of the centre of the macula, if associated with thickening of the adjacent retina (not residual hard exudates remaining after disappearance of retinal thickening)			

ESM Table 3.

Effect of matching on comparability of baseline characteristics between treated cases and controls. DRS = digital retinal screening, R1a = monocular background retinopathy, R1b = binocular background retinopathy. Call = matchit(Tz_exposed~Sex + Dm_duration + mean_HbA1c + Num_episode_Pre + Num_episode_Post + MBS_status + Pre_BG_Ret_Status + Prior_Maculopathy + Insulin + GLP1 + SGLT2i, method = "nearest", distance = "mahalanobis", m.order = "closest", replace = FALSE, data = Match_source, ratio = 1)

	Before Matching				After Matching			
	Means Treated	Means Control	Std. Mean Diff.	eCDF Mean	Means Treated	Means Control	Std. Mean Diff.	eCDF Mean
Sex = Female	0.573	0.520	0.106	0.052	0.573	0.574	-0.004	0.002
Sex = Male	0.427	0.480	-0.106	0.052	0.427	0.426	0.004	0.002
Diabetes duration (years)	10.590	10.233	0.048	0.008	10.590	10.414	0.024	0.004
HbA1c (%)	7.415	7.062	0.272	0.035	7.415	7.370	0.034	0.006
DRS episodes pre	4.422	4.429	-0.004	0.003	4.422	4.378	0.025	0.005
DRS episodes post	1.384	1.330	0.108	0.009	1.384	1.371	0.025	0.002
MBS status	0.074	0.042	0.122	0.032	0.074	0.074	0.000	0.000
R0	0.669	0.707	-0.082	0.039	0.669	0.669	-0.001	0.000
R1a	0.226	0.215	0.025	0.010	0.226	0.225	0.001	0.000
R1b	0.085	0.064	0.076	0.021	0.085	0.085	0.000	0.000
R2	0.002	0.003	-0.020	0.001	0.002	0.002	0.000	0.000
R3	0.018	0.010	0.060	0.008	0.018	0.018	0.000	0.000
M1	0.236	0.184	0.123	0.052	0.236	0.235	0.002	0.001
Insulin use	0.347	0.215	0.278	0.132	0.347	0.344	0.007	0.003
GLP-1RA use	0.844	0.336	1.404	0.509	0.844	0.828	0.046	0.017
SGLT2i use	0.816	0.688	0.329	0.127	0.816	0.814	0.004	0.001



ESM Figure 1: improvement in standardised mean difference following nearest-neighbour propensity score matching Call = matchit(Tz_exposed~Sex + Dm_duration + mean_HbA1c + Num_episode_Pre + Num_episode_Post + MBS_status + Pre_BG_Ret_Status + Prior_Maculopathy + Insulin + GLP1 + SGLT2i, method = "nearest", distance = "mahalanobis", m.order = "closest", replace = FALSE, data = Match_source, ratio = 1)

