Anti-diabetic drugs

eGFR ($mL/min/1.73m^2$)	Safe	Caution	Stop
> 60	All agents		
30–59	Acarbose Dulaglutide Lixisenatide Linagliptin Repaglinide Insulin Liraglutide	Metformin (reduce dose 45-30 mL/min) Saxagliptin (2.5mg @ 50 mL/min) Sitagliptin (50mg @30-50 mL/min) Alogliptin (12.5mg) Exenatide Exenatide QW Gliclazide Glimepiride Thiazoladinediones Canagliflozin (100mg @ 45-60 mL/min, but do not initiate at this GFR) Empagliflozin (45-60 mL/min, but do not initiate at this GFR)	Liraglutide (stop at 50 mL/min) Glyburide Dapaliflozin Canagliflozin (stop at 45 mL/min) Empagliflozin (stop at 45 mL/min)
15–29	Linagliptin Dulaglutide Liraglutide	Saxagliptin (2.5 mg) Sitagliptin (25 mg) Alogliptin (6.25mg) Thiazolidinediones Repaglinide Insulin	Metformin Exenatide Exenatide QW Lixisenatide Gliclazide Glimepride Acarbose
< 15		Linagliptin sitagliptin (25 mg) Alogliptin (6.25mg) Dulaglutide Repaglinide Thiazolidinediones Insulin	Saxagliptin Liraglutide

Anti-diabetic drugs

Biguanide

Use with caution in patients with eGFR < 60 mL/min/1.73m^2

Avoid in patients with eGFR < 30 mL/min/1.73m^2

- Metformin may be used in certain circumstances if eGFR is 20–29 mL/min/1.73m^2, but requires very close monitoring of serum bicarbonate levels to detect acidosis

When deciding which agent to add to metformin, consideration should be given to a number of factors including effectiveness in blood glucose lowering, degree of hyperglycemia, kidney function, and risk of hypoglycemia.

	Normal dose range	eGFR (mL/min/1.73m^2)		
		> 60	**30–60**	**< 30**
Metformin	500–1000 mg PO BID-TID (max 2500 mg/day)	100%	Use with caution with eGFR less than 45 mL/min; dose reduction to 500-1000 mg/day recommended	Avoid; use alternative agent

Anti-diabetic drugs

Sulfonylureas

	Normal dose range	eGFR (mL/min/1.73m^2)		
		> 60	**30–60**	**< 30**
Glyburide	1.25–20 mg/day PO divided once-twice daily	100%	Use alternative agent	Contraindicated; use alternative agent
Gliclazide regular release	80–160 mg PO BID	100%	Caution; Dose reductions may be necessary	Contraindicated; use alternative agent
Gliclazide MR	30–120 mg PO daily	100%	Caution; Dose reductions may be necessary	Contraindicated; use alternative agent
Glimepiride	Initial: 1–2 mg PO daily; titrate by 1–2 mg daily every 1–2 weeks (max 8 mg/day)	100%	Initial: 1 mg PO daily; titrate cautiously based on fasting blood glucose	Contraindicated; use alternative agent

DPP – IV Inhibitors

	Normal dose range	eGFR (mL/min/1.73m^2)		
		> 60	**30–60**	**< 30**
Sitagliptin	100 mg PO daily	100%	50 mg PO daily	25 mg PO daily
Saxagliptin	2.5–5 mg PO daily	100%	2.5 mg PO daily	2.5 mg PO daily d/c @ 15 mL/min
Linagliptin	5 mg PO daily	100%	100%	use with caution @ 15 mL/min
Alogliptin	25 mg po daily	100%	12.5 mg/day	6.25 mg/day

Anti-diabetic drugs

GLP-1 Receptor Antagonists

	Normal dose range	eGFR (mL/min/1.73m^2)		
		> 60	**30–60**	**< 30**
Exenatide (Byetta – immediate release)	5 mcg SC BID within 60 minutes prior to a meal; max 10 mcg SC BID	100%	Caution @ 30-50 mL/min no dosage adjustments provided	Contraindicated; use alternative agent
Exenatide (Bydureon – extended release)	2 mg once weekly	100%	Caution @ 30-50 mL/min no dosage adjustments provided	Contraindicated; use alternative agent
Liraglutide	Initial: 0.6 mg SC daily for 1 week, then 1.2 mg SC daily (max 1.8 mg/day)	100%	100%	Can use until GFR 15 mL/min then d/c.
Lixisenatide	Initial 10mcg SC daily x 14 days then increase to 20 mcg/day (max 20 mcg/day)	100%	100%	Use alternative agent

Insulin

Normal dose range	eGFR (mL/min/1.73m^2)	
	> 60	**30–60**
100%	100%	Insulin requirements may be reduced due to changes in insulin clearance or metabolism; monitor blood glucose closely especially in those with GFR < 15ml/min

Anti-diabetic drugs

SGLT2 Inhibitors

	Normal dose range	eGFR (mL/min/1.73m^2)		
		> 60	**30–60**	**< 30**
Canagliflozin	100 mg PO daily, may increase up to 300mg per day	100%	Max 100 mg/day down to GFR 45 mL/min. Do not initiate at GFR between 45-60 mL/min	Contraindicated; use alternative agent
Dapagliglozin	5 mg PO daily, may increase to 10 mg PO daily	100%	Use alternative agent due to lack of glycemic efficacy	Use alternative agent due to lack of glycemic efficacy
Empagliflozin	10 mg PO daily, may increase to 25 mg daily as tolerated	100%	Do not initiate agent at GFR 45-60 ml/min. Discontinue at GFR persistently < 45 ml/min	Contraindicated; Use alternative agent