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## Appendix 7

### Therapeutic Considerations for Renal Impairment

Medication	CKD 3A (eGFR 45-59 mL/min)	CKD 3B (eGFR 30-44 mL/min)	CKD 4 (eGFR 15-29 mL/min)	CKD 5 (eGFR <15 mL/min or dialysis)
Metformin‡	Dose adjustment not required	Reduce dose (500-1,000 mg/day) Do not initiate, can maintain	Use alternative agent due to risk of accumulation	
<b>GLP-1 receptor agonists</b>				
Dulaglutide	Dose adjustment not required			Caution as safety not established
Exenatide/ Exenatide ER	Dose adjustment not required (>50 mL/min)	Caution (30-50 mL/min)	Use alternative agent due to risk of accumulation	
Lixisenatide	Dose adjustment not required		Use alternative agent as safety not established	
Liraglutide	Dose adjustment not required			Use alternative agent as safety not established
<b>SGLT2 inhibitors</b>				
Canagliflozin‡	Can maintain at 100 mg daily, do not initiate for glycemic control. May be initiated when indicated for CV and renal protection*	Use alternative agent because of limited glycemic efficacy. May be considered when indicated for CV and renal protection*	Use alternative agent due to lack of glycemic efficacy	
Dapagliflozin‡	Use alternative agent due to lack of glycemic efficacy			
Empagliflozin‡	Can maintain, do not initiate for glycemic control. May be initiated when indicated for CV and renal protection*	Use alternative agent because of limited glycemic efficacy. May be considered when indicated for CV and renal protection*	Use alternative agent due to lack of glycemic efficacy	
<b>DPP-4 Inhibitors</b>				
Alogliptin	Lower dose 12.5 mg daily		Lower dose 6.25 mg daily	
Linagliptin	Dose adjustment not required			Caution as safety not established
Saxagliptin	Dose adjustment not required (>50 mL/min)	Lower dose 2.5 mg daily (<50 mL/min)	Use alternative agent as unproven efficacy for patients requiring hemodialysis	
Sitagliptin	Dose adjustment not required (≥50 mL/min)	Lower dose 50 mg daily (30-49 mL/min)	Lower dose 25 mg daily	
<b>Alpha-glucosidase inhibitor</b>				
Acarbose	Dose adjustment not required			Consider alternative agent as safety not established
<b>Meglitinides</b>				
Repaglinide	Consider lower doses due to risk of hypoglycemia		Consider lower doses and beware of extended duration of action due to risk of hypoglycemia	
<b>Sulfonylureas</b>				
Gliclazide‡	Caution due to risk of hypoglycemia		Use alternative agent due to risk of accumulation and hypoglycemia	
Glimepiride‡	Caution due to risk of hypoglycemia		Use alternative agent due to risk of accumulation and hypoglycemia	
Glyburide‡	Use alternative agent due to risk of accumulation and hypoglycemia			
<b>Thiazolidinediones</b>				
Rosiglitazone / Pioglitazone	Dose adjustment not required but caution as may lead to fluid retention			
<b>Insulins</b>	Dose adjustment not required		Consider lower doses and beware of extended duration of action due to risk of hypoglycemia	

\*Limited glycemic efficacy but may be considered to reduce progression of nephropathy or for CV protection where indicated for individuals with eGFR >30 mL/min (see recommendations).  
‡These medications should be held during intercurrent illness - see Appendix 8. Sick Day Medication List.  
Dose adjustment is not recommended for the antihyperglycemic agents listed above in CKD stages 1 and 2.  
For full details on monitoring, please see product monographs.