Diabetes Management in Patients on Dialysis

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| **Agents to Consider** | **Agents to Avoid**  |
| **GLP-1 Agonists*** **Semaglutide**; **Ozempic (injection) Rybelsus (oral)**: No adjustment required
* **Liraglutide**; **Victoza**: Dose adjustment may not be required. Monitoring is recommended
* **Dulaglutide**; **Trulicity**: Mild to severe impairment (including ESRD) no adjustment required
 | **GLP-1 Agonists****Exenatide** **(Byetta (IR) & Bydureon (ER))**:* (Both formulations) Severe impairment (CrCl < 30 mL/min) or ESRD use **NOT** recommended
* (Immediate release) Mild impairment (CrCl 30 to 50 mL/min): No adjustment required

Exenatide is **NOT** recommended in patients with ESRD receiving **dialysis****Lixisenatide (Lyxumia)*** Mild to moderate impairment (eGFR 30 to 89 mL/min): No adjustment necessary.
* ESRD (eGFR <15 mL/min): Use **NOT** recommended
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| **DPP4-inhibitors** **Tradjenta (linagliptin):** No dose adjustment required **Januvia (sitagliptin):*** eGFR >45 mL/min: No adjustment is required​
* Moderate impairment (eGFR 30 to less than 45 mL/min): 50 mg orally once daily​
* Severe impairment (eGFR <30 mL/min): 25 mg orally once daily
* ESRD on **hemodialysis or peritoneal dialysis**: 25 mg orally once daily; may be administered without regard to the timing of hemodialysis​

**Onglyza (saxagliptin):*** eGFR > or = 45 mL/min: No adjustment necessary
* Moderate to severe eGFR <45 mL/min: 2.5 mg once daily
* ESRD requiring **hemodialysis**: 2.5 mg once daily; administer following hemodialysis

**Nesina (Alogliptin)*** CrCl > or = 60ml/min: No adjustment necessary
* CrCl > or = 30 to <60ml/min: 12.5 mg orally once daily
* CrCl > or = 15ml/min to <30ml/min or patients with ESRD with CrCl <15 mL/min or requiring **hemodialysis:** 6.25 mg orally once daily

May be administered without regard to the timing of hemodialysis. Use has **NOT** been studied in patients undergoing **peritoneal dialysis**  | **SGLT2 Inhibitors*** eGFR > or = 45 mL/min: No dosage adjustment necessary
* eGFR < 45 mL/min: Do **NOT** initiate therapy; discontinue use if eGFR drops and remains below 45 mL/min
* Severe renal impairment (CrCl <30ml/min), ESRD, or receiving dialysis: **Use contraindicated**

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| **SU*** **Glimepiride**: Patient on dialysis, initiate at 1 mg/day
* **Glipizide**- Staring dose of 2.5mg orally once daily (extended release tablets) is recommended. Use conservative dosing during initiation and maintenance to avoid hypoglycemia in patients with renal impairment. **Agent of choice** per 2014 journal. See references.
 | **SU** * **Glyburide**: Avoid w/ CrCl <30ml/min
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| **TZDs*** **Pioglitazone**: No adjustment required.

In dialysis doses of 15 mg to 30 mg daily have been used. See references.  | **Metformin** * Contraindicated w/CrCl <30 ml/min
* If eGFR falls below 30 ml/min after initiation, discontinue treatment
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| **Meglitinides*** **Repaglinide**: Severe (CrCl 20 to 40 mL/min): Initiate at 0.5 mg orally before each meal and titrate carefully.
* **Nateglinide**: Various recommendations

Mild to severe impairment: No dose adjustment required VseGFR <30 mL/min: Initiate at 60 mg orally 3 times daily with meals Vs * **Avoid use of class in dialysis** per 2014 journal. See references.
 | **Pramlintide** * Avoid use
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Insulin

* Short Acting: More frequent dosage adjustments and blood glucose monitoring may be necessary
* Long Acting: No specific recommendations
* Upon initiation of dialysis, peripheral insulin resistant may approve, further reducing insulin requirements.
* Experts recommend an insulin dose reduction of 50% when the eGFR is <10 ml/min. See 2014 reference.
* This patient population is at an **increased** risk of hypoglycemic events!

References

2014 Journal:

Rhee CM, Leung AM, Kovesdy CP, Lynch KE, Brent GA, Kalantar-Zadeh K. Updates on the management of diabetes in dialysis patients. Semin Dial. 2014;21(2):135-145. doi:10.1111/sdi.12198

TZD:

Tuttle KR, Bakris GL, Bilous RW, et al: Diabetic kidney disease: a report from an ADA Consensus Conference. Diabetes Care 2014; 37(10):2864-2883.