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 |
| **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** |
| **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 |
| **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 |
| **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  Vs  eGFR <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 |

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.