

Title: A case of initiating dapagliflozin in a patient with ventricular assistance device

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Background: Sodium-Glucose Cotransporter-2 inhibitors (SGLT2i) were found to reduce the composite endpoint of cardiovascular death or worsening heart failure in the EMPEROR-Reduced trial and DAPA-HF trial. However, patients with ventricular assistance devices (VAD) were excluded from the aforementioned trials, therefore, the role of SGLT2i in the cohort of patients with VAD is unclear.

Case: a 67-year-old male with NYHA Class II ACC/AHA stage D heart failure with reduced ejection fraction (HFrEF), secondary to nonischemic cardiomyopathy, presented for elective admission for plans for VAD implantation. He was status post HeartMate III VAD implantation as destination therapy. Dapagliflozin 10 mg was initiated on the day of discharge, along with other guideline-directed medical therapy.

Decision-making: To date, no clinical data about the role of SGLT2i in patients with VAD has been reported. Nevertheless, dapagliflozin was initiated for this patient given the substantial benefits of SGLT2i therapy reported. During approximately 3 months after initiation, dapagliflozin was well tolerated without any negative change in the disease status. The trends of vital signs and lab values were shown in Table 1.

Conclusion: In this case report, dapagliflozin was initiated after the implantation of VAD without any adverse events noticed. Considering the substantial benefits of SGLT2i therapy in patients with HFrEF, it is imperative to evaluate the efficacy and safety of SGLT2i therapy in patients with VAD.

Table 1, The vital signs and lab values of the patient after initiating dapagliflozin. NA, not available.

	Systolic Blood pressure (mmHg)	Diastolic Blood Pressure (mmHg)	Pulse (beats/min)	Weight (Kg)	NT-proBNP (ng/L)	Serum Creatinine (mg/dL)	Serum Sodium (mmol/L)	Serum Potassium (mmol/L)
Day 0 (Initiate Dapagliflozin)	104	85	102	79.5	4552	0.66	135	4.1
Day 1	109	84	79	79.5	NA	0.84	134	3.9
Day 8	99	71	80	71.9	NA	1.10	135	4.8
Day 15	102	80	64	72	1791	1.05	135	4.7
Day 22	97	71	77	72.1	1780	1.13	132	4.7
Day 45	92	73	72	76.2	1249	1.04	139	4.1
Day 78	84	63	89	78.6	1148	1.05	139	4.4
Day 104	93	75	80	81.4	1213	1.09	137	4.5