PE093

Insulin pump therapy in Type 2 diabetes with empagliflozin improved glucose control Eunsil HONG, Joonho WANG, Hyunju AN, Soobong CHOI Konkuk University Medical School

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Aims: Empagliflozin, a selective inhibitor of sodium-glucose cotransporter 2 (SGLT2), has been shown to improve glycaemic control, insulin resistance and insulin-associated weight gain in type 2 diabetes mellitus (T2DM) patients. Here the efficacy of insulin pump treatment with empagliflozin therapy is evaluated in this population.

Methods: This was a single-center retrospective observational study. A total of 138 patient, whose T2DM was controlled by insulin pump, was assigned to receive 10mg/day of empagliflozin. The primary end point was change from baseline in HbA1c after insulin pump treatment and empagliflozin therapy, respectively. Secondary end points were changes from baseline in insulin dose, BMI, creatinine and c-peptidogenic index after insulin pump treatment and empagliflozin therapy, respectively.



Figure 1. HbA1c was decreased (p<0.001) during insulin pump treatment and empagliflozin therapy.

Figure 2. c-peptidogenic index was increased (p<0.001) during insulin pump treatment and empagliflozin therapy.

Figure 3. insulin dose was decreased (p<0.001) during insulin pump treatment and empagliflozin therapy...

 Table 1. Result summary

Table 3. Study population demographics

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Mean 0.94 0.97 0.97 0.97 SD 0.39 0.41 0.51 *igure 4. Creatinine was stable during insulin pump treatment and empagliflozin therapy. Initial visit vs.
SD 0.39 0.41 0.51 Figure 4. Creatinine was stable during insulin pump treatment and empagliflozin therapy. N N 138 Mean (SD) ** ** ** ** ** Mean (SD) Mean (SD) Mean (SD) Mean (SD) Mean (SD) Mean (SD) ** ** ** ** Mean (SD) Mean (SD) Mean (SD) Mean (SD) ** ** ** ** Mean (SD) Mean (SD) Mean (SD) Median 66 Mean (SD) Mean (SD) Mean (SD) Mean (SD) Mean (SD) Median 66 Mean (SD) Mean (SD) Mean (SD) Mean (SD) Mean (SD) Mean (SD) ** ** ** Min, Max 43, 93 Mean (SD) Type of Diabeter (%) Type of Diabeter (%) Type of Diabeter (%) Type of Diabeter (%)
Insulin pump Pump+Jardiance Pump+Jardiance N 138 Figure 4. Creatinine was stable during insulin pump treatment and empagliflozin therapy. HbA1c (%) ** ** ** ** Mean (SD) 66.9 (11.0) C-peptidogenic index * * ** ** Min, Max 43, 93
Figure 4. Creatinine was stable during insulin pump treatment HbA1c (%) ** ** ** Mean (SD) 66.9 (11.0) and empagliflozin therapy. c-peptidogenic index * ** ** Mean (SD) 66.9 (11.0) Type of Diabetes (%)
and empagliflozin therapy. ** * ** <u>Min, Max 43, 93</u>
c-peptidogenic index * ** MIN, Max 43, 93
Total Insulin (U/day) ** * ** <u>Type of Diabetes (76)</u>
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Mean 24.6 25.0 24.3
SD 3.2 3.3 3.3 Duration of the Jardiance treatment (months)
N 138
Figure 5. BMI was stable during insulin pump treatment and 5.8 (0.5)
empagliflozin therapy.
Min, Max 4, 6





	Initial Visit	Insulin pump	Pump + Jardianc
HbA1c (%)	9.18(2.10)	7.39 (1.23)	6.71 (0.93)
c-peptidogenic index	0.0192 (0.0229)	0.0273 (0.0240)	0.0360 (0.0375)
Total Insulin (U/day)	44.7 (21.3)	36.1 (14.3)	32.7 (13.8)
Creatinine (mg/dL)	0.94 (0.39)	0.97 (0.41)	0.97 (0.51)
BMI	24.6 (3.2)	25.0 (3.3)	24.3 (3.3)

	Initial visit	Insulin pump	Initial visit
	VS.	VS.	VS.
	Insulin pump	Pump+Jardiance	Pump+Jardiance
HbA1c (%)	* *	* *	**
c-peptidogenic index	*	*	* *
Total Insulin (U/day)	* *	*	* *
Creatinine (mg/dL)	-	-	-
BMI	-	-	-

Results: Data from 138 patients were analyzed. For the population, mean ± SD of T2DM duration was 12.6 ± 8.1 years, mean±SD of insulin pump treatment duration was 3.7±3.2 years and mean±SD of empagliflozin therapy duration was 5.8±0.5 months. Mean±SD of HbA1c was changed form 9.18±2.10% at initial visit to 7.39±1.23% after insulin pump treatment (p<0.001) and 6.71±0.93% after empagliflozin therapy added to insulin pump treatment (p<0.001). Furthermore, the c-peptidogenic index was increased (p<0.001) and insulin dose was decreased (p<0.001) after empagliflozin therapy added to insulin pump treatment. The BMI and creatinine were stable during insulin pump treatment and empagliflozin therapy.

Conclusions: Empagliflozin added to insulin pump treatment improved glycaemic control, c-peptidogenic index and insulin dosing in T2DM patients. Also, this therapy stabilized BMI and creatinine.