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Safety of Sodium Glucose Co- Transporter 2 Inhibitors based on ADR'S and FBS, PPBS & HBA1C Parameters in Type-2 Diabetes Mellitus

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KEYWORDS
Hypotension , Candidiasis, Dapagliflozin

ABSTRACT:

When compared to the several medications accessible to the doctor to treat type 2 diabetes, sodium-glucose cotransporter-2 (SGLT2) inhibitors offer a distinct therapeutic activity. Due to its insulin independent effect, SGLT2 inhibitors have been proven to have a comparatively low risk of hypoglycaemia. When taken as monotherapy or in conjunction with other oral hypoglycaemic medications or insulin treatment, SGLT2 inhibitors are well tolerated and have been used safely. Patients with ADR's After Using Canagliflozin where Hypotension (29%) was more common ADR followed by Dehydration (26%), Weight loss (15%), Polyuria (12%), Vaginal Candidiasis (7%), UTI (3%), Hypoglycaemia (5%) and Ketoacidosis (3%). Percentage of Patients with ADR's After Using Canagliflozin in which hypotension had highest percentage (25%) of occurrence in Canagliflozin prescribed patients. Patients with ADR's After Using Dapagliflozin where Dehydration (26%) was more common ADR followed by Hypotension (23%), Weight loss (19%), Polyuria (12%), Vaginal Candidiasis (9%), UTI (4%), Hypoglycaemia (5%) and Ketoacidosis (2%). Percentage of Patients with ADR's After Using Dapagliflozin in which dehydration had highest percentage(14.69%) of occurrence in Dapagliflozin prescribed patients. Patients presented with more than one ADR in which dehydration along with hypotension was more common when compared to others in both Canagliflozin and Dapagliflozin prescribed patients.

Patients with ADR's After Using Canagliflozin versus Dapagliflozin in which hypotension was more common ADR after using Canagliflozin whereas Dehydration was more common ADR after using Dapagliflozin. Mean FBS and PPBS of Control, Canagliflozin and Dapagliflozin were similar, hence safety was similar for Control and Canagliflozin as well as it is similar for Control and Dapagliflozin. From this study, we concluded that Patients with ADR's After Using Canagliflozin versus Dapagliflozin in which hypotension was more common ADR after using Canagliflozin whereas Dehydration was more common ADR after using Dapagliflozin. ADRs in Control group in which weight gain was negative effect and Hypoglycaemia was found to be more in Control group compared to Canagliflozin and Dapagliflozin prescribed groups whereas weight loss was positive effect in Canagliflozin and Dapagliflozin prescribed groups. In accordance with hypoglycaemia as an ADR it is more in Control group than in Canagliflozin and Dapagliflozin groups. This shows that there was slight difference but similar Safety by using Canagliflozin versus Dapagliflozin

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Introduction:

When taken as monotherapy or in conjunction with other oral hypoglycaemic medications or insulin treatment, SGLT2 inhibitors are well tolerated and have been used safely.

Due to its insulin independent effect, SGLT2 inhibitors have been proven to have a comparatively low risk of hypoglycaemia. In the Phase III development studies, there were no significant occurrences of hypoglycaemia observed when SGLT2 inhibitors were taken as monotherapy, and a meta-analysis found that the risk of hypoglycaemia was comparable to that of other medicines[(1)].

Due to hyperglycaemia and the ensuing glycosuria, diabetes itself is linked to an increased risk of vaginal infection and urinary tract infection (UTI). Because SGLT2 inhibitors cause hyperglycaemia, there is a corresponding rise in vaginal and UTI infections. Genital and urinary tract infections have been linked to several placebo-controlled studies. When compared to placebo, Dapagliflozin caused higher infections (genital infection 4.1-5.7% vs. 0.9%; UTI 3.6–5.7 % vs. 3.7 %)[(2)].

Canagliflozin pooled studies revealed similar results (genital infection 7.5% vs 1.9% in placebo; UTI 5.1% vs. 4.0% placebo). Similar data for genital tract infections are available for Empagliflozin, although there was no statistically significant difference in UTIs[(3)].

SGLT2 inhibitors are thought to increase the risk of euglycemic ketoacidosis, which has led to warnings from the FDA and EMA [(4)]. The FDA and EMA based their warnings on 20 and 101 clinical instances, respectively, however it is likely that some of the incidents included people with type 1 diabetes. However, both type 1 and type 2 diabetes have been associated with this adverse effect while using SGLT2s [(5)]. In this case series, insulin decreases, low calorie and fluid intake, concurrent illnesses, and alcohol usage are some of the circumstances that led to ketoacidosis. The key issue presented is that ketoacidosis can develop in the presence of euglycemia or little elevated blood glucose and that it may take some time to diagnose it. This might be avoided if considerable ketonuria could be detected. The estimated incidence rates are modest (0.5, 0.8, and 0.2 per 1000 patient years with Canagliflozin 100 mg, Canagliflozin 300 mg, and comparator) but nevertheless more than double with the SGLT2 inhibitor in a comprehensive retrospective analysis of 17,596 people in the CANVAS trial [(6)]. Therefore, it is important to be aware of this potential consequence, especially if the introduction of SGLT2 leads in a decrease in the dosage of insulin. A decrease in insulin dosage in this situation shouldn't be considered a success in and of itself.

Table 1. Properties of SGLT2 inhibitors according to 2015 American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD) position statement

Class	Compounds	Cellular mechanisms	Primary physiological actions	Advantages	Disadvantages/ adverse effects	Cost
SGLT2 inhibitors	Canagliflozin Dapagliflozin Empagliflozin	Inhibits SGLT2 in the proximal nephron	Blocks glucose reabsorption by the kidney, increasing glycosuria	No hypoglycaemia Weight loss Reduces blood pressure Effective at all stages of type 2 diabetes	Genitourinary infections Polyuria Volume depletion/ hypotension/ dizziness Increases LDL cholesterol Increases creatinine (transient)	"High"

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Adapted from ADA/EASD [7] © American Diabetes Association

LDL low density lipoprotein cholesterol, SGLT2 sodium glucose cotransporter 2

Methology:

Source of Data and Study Design:
Collect the data from the patients admitted into General Medicine and Endocrine Department who are diagnosed with Type 2 Diabetes Mellitus

All the patients admitted during the study duration are followed from the day of prescribing of any anti-diabetic with an SGLT-2 inhibitor up to not less than 1year of the treatment or a minimum of HbA1C done 3 times

- ❖ FBS and PPBS checked for every month
- ❖ RFT(Sr. Creatinine, B. Urea and Blood Urea Nitrogen) checked for every 4 months
- ❖ HbA1C checked for every 6 months

Group 1: Patients prescribed with Canagliflozin as an Add-on till 4 drug therapy of diabetes
Group 2: Patients prescribed with Dapagliflozin as an Add-on till 4 drug therapy of diabetes
Control: Patients prescribed with a standard treatment regimen according to ICMR guidelines from dual-drug therapy to quat-drug therapy.

Group 1	Group 2	Control
Canagliflozin As Second Add-on drug	Dapagliflozin As Second Add-on drug	Diabetic Dual-drug therapy
Canagliflozin As Third Add-on drug	Dapagliflozin As Third Add-on drug	Diabetic Triple-drug therapy
Canagliflozin As Fourth Add-on drug	Dapagliflozin As Fourth Add-on drug	Diabetic Quat-drug therapy

All groups of Canagliflozin and Dapagliflozin are compared to Control therapy as per their number of anti-hyperglycaemics respectively.

Study Site: Anu Group of Hospitals, Main Branch, Suryaraopet, Vijayawada

Study Duration: The study will be carried out for a period of 1 year from collection of case, cases will be collected for 3 months.

Study Design: A Prospective Interventional Comparative Study.

Study Criteria: The study will be carried out by considering the following criteria:

Inclusion Criteria: Patients admitted in general medicine and endocrine department who are diagnosed with Diabetes Mellitus
- Age: 35 to 65 years,
- Gender: Male and Female.
- Prescribed with SGLT-2 inhibitors as add-on therapy with other anti- hyperglycemics including insulin.
- Prescribed with anti-hyperglycemics including insulin.

Exclusion Criteria:
- Patients with Type1 Diabetes, Gestational Diabetes and Paediatrics
- Patients who are discharged without notice
- Patients who are unwilling to participate in the study
- Patients who doesn't meet the inclusion criteria

Study procedure:

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Proposal

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Acceptance and approval from ethical committee

↓

Patient data collection of both IP and OP who are prescribed with any type of anti-diabetics

↓

Follow up of cases by checking FBS and PPBS for every 3 months and HbA1C for every 4 months Renal Function Tests for every 6 months

↓

Study to be done for a period of 1 year 6 months (Every patient for 1 year)

↓

Assess and classify the data accordingly Results and Discussion Conclusion

Results and Discussion:

A prospective Interventional Comparative Study was conducted in the General Medicine and Endocrine Department, Anu Group of Hospitals, Main Branch, Suryaraopet, Vijayawada over a period of 12 months in 1728 patients (N) out of which 927 (n_1) patients using Canagliflozin and 801 (n_2) patients using Dapagliflozin from December 2021 to December 2022. In this study Control group population was 400.

Table 2. No. of Patients Prescribed with Canagliflozin and Dapagliflozin

No. of Patients prescribed with Canagliflozin (n_1)			**No. of Patients prescribed with Dapagliflozin (n_2)**			**Total (N)**
927			801			1728
Dual Therapy	Triple Therapy	Quadruple Therapy	Dual Therapy	Triple Therapy	Quadruple Therapy	
318	308	301	291	263	247	

Table 2. shows the No. of Patients Prescribed with Canagliflozin and Dapagliflozin and No. of Patients with Dual Therapy, Triple Therapy, Quadruple Therapy

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Table 3. Patients with ADR's After Using Canagliflozin

ADR's	No. of patients	Percentage
Vaginal Candidiasis	56	7%
Hypotension	216	29%
Ketoacidosis	20	3%
Weight loss	111	15%
Polyuria	90	12%
Dehydration	196	26%
UTI (Urinary Tract Infection)	25	3%
Hypoglycaemia	38	5%
Total	752	752/927*100=81.12%

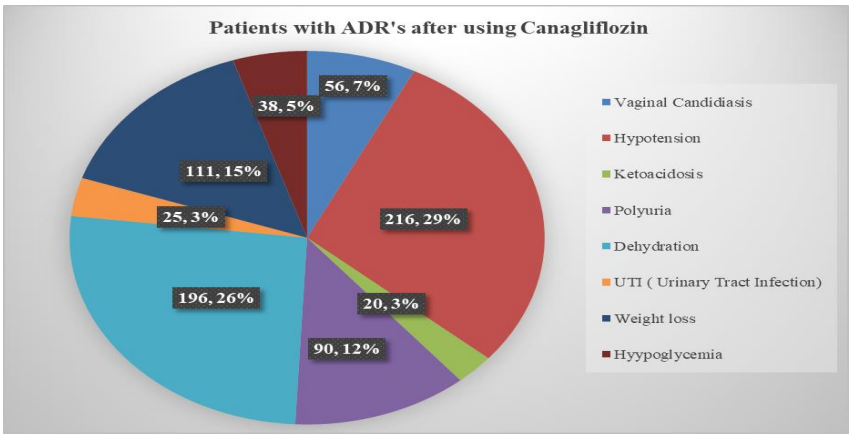

Fig 1. Patients with ADR's After Using Canagliflozin

Table 3 and Fig 1. depicts Patients with ADR's After Using Canagliflozin where Hypotension(29%) was more common ADR followed by Dehydration (26%), Weight loss(15%), Polyuria(12%), Vaginal Candidiasis(7%), UTI(3%), Hypoglycaemia(5%) and Ketoacidosis(3%)

Table 4. Patients with ADR's After Using Dapagliflozin

ADR's	No. of patients	Percentage
Vaginal Candidiasis	43	9%
Hypotension	112	23%
Ketoacidosis	8	2%
Weight loss	93	19%
Polyuria	60	12%

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Dehydration	127	26%
UTI (Urinary Tract Infection)	20	4%
Hypoglycaemia	24	5%
Total	487	487/801*100=60.8%

Table 4 shows Percentage of Patients with ADR's After Using Dapagliflozin in which hypotension had highest percentage(23.3%) of occurrence in Canagliflozin prescribed patients

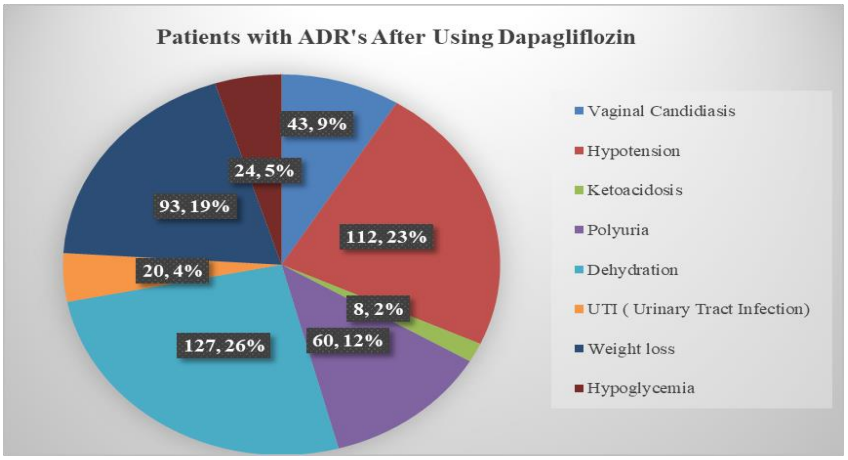

Fig 2. Patients with ADR's After Using Dapagliflozin

Table 4 and Fig 2. depicts Patients with ADR's After Using Dapagliflozin where Dehydration (26%) was more common ADR followed by Hypotension (23%), Weight loss(19%), Polyuria(12%), Vaginal Candidiasis(9%), UTI(4%), Hypoglycaemia(5%) and Ketoacidosis(2%).

Table 5. Patients with ADR's After Using Canagliflozin versus Dapagliflozin

ADR's	**No. of patients with ADR's after using Canagliflozin**	**No. of patients with ADR's after using Dapagliflozin**
Vaginal Candidiasis	56	43
Hypotension	216	112
Ketoacidosis	20	8
Weight loss	111	93
Polyuria	90	60
Dehydration	196	127
UTI (Urinary Tract Infection)	25	20

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Hypoglycaemia	38	24
Total	752	487

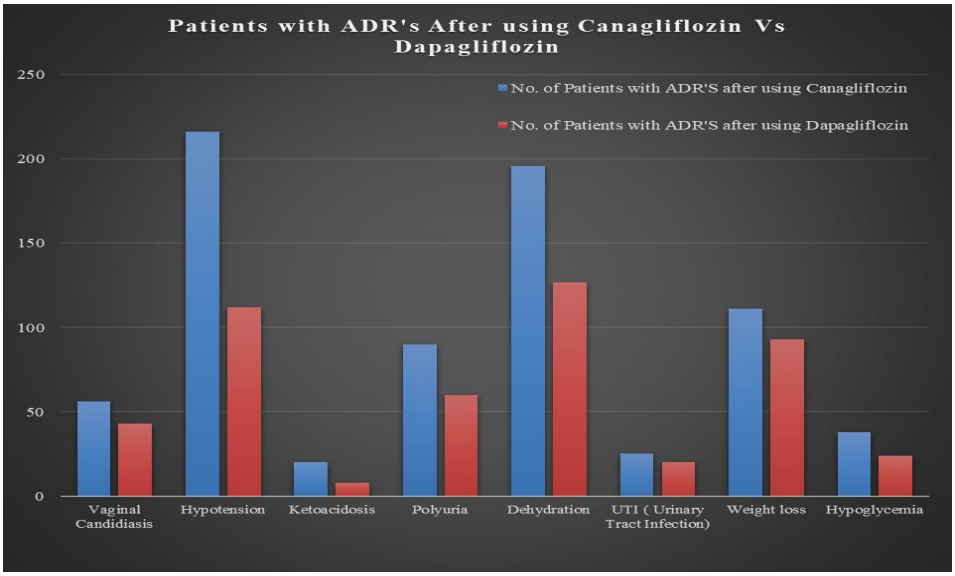

Fig 3. Patients with ADR's After Using Canagliflozin versus Dapagliflozin

Table 5 and Fig 3. depicts Patients with ADR's After Using Canagliflozin versus Dapagliflozin. In which hypotension was more common ADR after using Canagliflozin whereas Dehydration was more common ADR after using Dapagliflozin. We performed Chi-square test for Patients with ADR's After Using Canagliflozin versus Dapagliflozin used to treat type-2 diabetes. 9.12529 is the calculated Chi-square value at 5 degrees of freedom and 5% level of significance (P-value: < 0.1042- not significant). This shows that there was slight difference but similar safety by using Canagliflozin versus Dapagliflozin.

Table 6. Patients Presented with More than One ADR

ADR's	**Canagliflozin**	**Dapagliflozin**
Hypotension, dehydration, polyuria	67	54
Dehydration and hypotension	104	98
Polyuria and dehydration	81	58
UTI and Vaginal candidiasis	23	17
Weight loss, ketoacidosis, vaginal candidiasis	6	3

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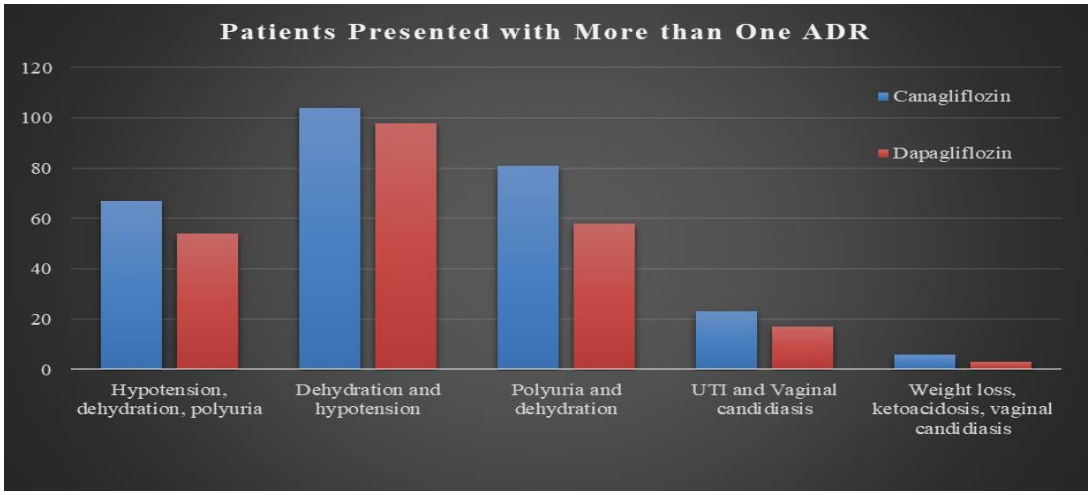

Fig 5. Patients Presented with More than One ADR

Table 6 and Fig 5. Depicts the patients presented with more than one ADR in which dehydration along with hypotension was more common when compared to others in both Canagliflozin and Dapagliflozin prescribed patients.

Table 7. Control Vs Canagliflozin Mean FBS, PPBS Levels

	Mean FBS (mg/dl)	**Mean PPBS (mg/dl)**	**Mean FBS (mg/dl)**	**Mean PPBS (mg/dl)**
	Control Group		**Canagliflozin**	
Day 0 (Day of prescribing SGLT-2 inhibitor)	225	300	227	305
Day 1 (After 1 month)	145	220	140	230
Day 2 (After 2 months)	155	235	145	225
Day 3 (After 3 months)	160	255	159	254
Day 4 (After 4 months)	150	240	155	246
Day 5 (After 5 months)	165	250	160	250

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Day 6 (After 6 months)	148	236	147	235
Day 7 (After 7 months)	157	245	155	242
Day 8 (After 8 months)	161	252	159	246
Day 9 (After 9 months)	154	248	151	245
Day 10 (After 10 months)	149	244	153	242
Day 11 (After 11 months)	163	254	161	255
Day 12 (After 12 months)	156	245	152	243

Table 8. Control Vs Dapagliflozin Mean FBS, PPBS Levels

	Mean FBS (mg/dl)	**Mean PPBS (mg/dl)**	**Mean FBS (mg/dl)**	**Mean PPBS (mg/dl)**
	Control Group		**Canagliflozin**	
Day 0 (Day of prescribing SGLT-2 inhibitor)	225	300	227	305
Day 1 (After 1 month)	145	220	140	230
Day 2 (After 2 months)	155	235	145	225
Day 3 (After 3 months)	160	255	159	254

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Day 4 (After 4 months)	150	240	155	246
Day 5 (After 5 months)	165	250	160	250
Day 6 (After 6 months)	148	236	147	235
Day 7 (After 7 months)	157	245	155	242
Day 8 (After 8 months)	161	252	159	246
Day 9 (After 9 months)	154	248	151	245
Day 10 (After 10 months)	149	244	153	242
Day 11 (After 11 months)	163	254	161	255
Day 12 (After 12 months)	156	245	152	243

Table 9. Expected Frequencies of Mean FBS of Control, Canagliflozin and Dapagliflozin

	Control	**Canagliflozin**	**Dapagliflozin**
Day 0 (Day of prescribing SGLT-2 inhibitor)	224.682	222.099	225.22
Day 1 (After 1 month)	145.107	143.439	145.454

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Day 2 (After 2 months)	153.465	151.702	153.833
Day 3 (After 3 months)	160.152	158.312	160.536
Day 4 (After 4 months)	152.128	150.38	152.492
Day 5 (After 5 months)	163.83	161.947	164.223
Day 6 (After 6 months)	148.116	146.413	148.471
Day 7 (After 7 months)	156.809	155.007	157.184
Day 8 (After 8 months)	160.821	158.973	161.206
Day 9 (After 9 months)	153.465	151.702	153.833
Day 10 (After 10 months)	151.125	149.388	151.487
Day 11 (After 11 months)	162.827	160.956	163.217
Day 12 (After 12 months)	155.472	153.685	155.844

Table 10. Chi- Square Points of Mean FBS of Control, Canagliflozin and Dapagliflozin

	Control	**Canagliflozin**	**Dapagliflozin**
Day 0 (Day of prescribing SGLT-2 inhibitor)	0	0.108	0.121
Day 1 (After 1 month)	0	0.082	0.086
Day 2 (After 2 months)	0.015	0.296	0.174
Day 3 (After 3 months)	0	0.003	0.002
Day 4 (After 4 months)	0.03	0.142	0.041

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Day 5 (After 5 months)	0.008	0.023	0.004
Day 6 (After 6 months)	0	0.002	0.001
Day 7 (After 7 months)	0	0	0
Day 8 (After 8 months)	0	0	0
Day 9 (After 9 months)	0.002	0.003	0
Day 10 (After 10 months)	0.03	0.087	0.015
Day 11 (After 11 months)	0	0	0
Day 12 (After 12 months)	0.002	0.018	0.009

We performed Chi-square test for Patients in Control, Canagliflozin and Dapagliflozin groups for Mean FBS parameter. 1.304 is the calculated Chi-square value at 24 degrees of freedom and 5% level of significance (P-value: 0.2535 > 0.05 - not significant). This shows that there was slight difference but similar Safety by using Canagliflozin versus Dapagliflozin.

Table 11. Expected Frequencies of Mean FBS of Control, Canagliflozin and Dapagliflozin

	Control	**Canagliflozin**	**Dapagliflozin**
Day 0 (Day of prescribing SGLT-2 inhibitor)	300.155	299.597	300.248
Day 1 (After 1 month)	226.45	226.029	226.521
Day 2 (After 2 months)	233.121	232.687	233.193
Day 3 (After 3 months)	254.798	254.324	254.877
Day 4 (After 4 months)	242.125	241.675	242.2

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Day 5 (After 5 months)	250.129	249.664	250.207
Day 6 (After 6 months)	235.789	235.35	235.862
Day 7 (After 7 months)	242.792	242.34	242.867
Day 8 (After 8 months)	251.797	251.328	251.875
Day 9 (After 9 months)	246.127	245.669	246.204
Day 10 (After 10 months)	242.459	242.007	242.534
Day 11 (After 11 months)	255.799	255.323	255.878
Day 12 (After 12 months)	242.459	242.007	242.534

Table 12. Chi- Square Points of Mean PPBS of Control, Canagliflozin and Dapagliflozin

	Control	**Canagliflozin**	**Dapagliflozin**
Day 0 (Day of prescribing SGLT-2 inhibitor)	0	0.097	0.092
Day 1 (After 1 month)	0.184	0.07	0.027
Day 2 (After 2 months)	0.015	0.254	0.145
Day 3 (After 3 months)	0	0	0
Day 4 (After 4 months)	0.019	0.077	0.02
Day 5 (After 5 months)	0	0	0
Day 6 (After 6 months)	0	0.001	0

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Day 7 (After 7 months)	0.02	0	0.014
Day 8 (After 8 months)	0	0.113	0.104
Day 9 (After 9 months)	0.014	0.002	0.006
Day 10 (After 10 months)	0.01	0	0.01
Day 11 (After 11 months)	0.013	0	0.018
Day 12 (After 12 months)	0.027	0.004	0.051

We performed Chi-square test for Patients in Control, Canagliflozin and Dapagliflozin groups for Mean PPBS parameter. 1.407 is the calculated Chi-square value at 24 degrees of freedom and 5% level of significance (P-value: 0.4277 > 0.05 - not significant). This shows that there was slight difference but similar safety by using Canagliflozin versus Dapagliflozin.

Table 13. Control, Canagliflozin and Dapagliflozin Groups HbA1C Levels

Days	**Day 0**	**Day 90**	**Day 180**	**Day 270**	**Day 360**
Control Group HbA1c Level (Mean)	9	7.5	6.5	6.5	6
Canagliflozin group HbA1c Level (Mean)	9	6.5	5 .5	5.5	5
Dapagliflozin group HbA1c Level (Mean)	9	6.5	5.5	5.5	5

Table 14. Expected Frequencies of HbA1c for Control, Canagliflozin and Dapagliflozin prescribed groups

Days	**Day 0**	**Day 90**	**Day 180**	**Day 270**	**Day 360**
Control	9.731	7.388	6.307	6.307	5.766

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Canagliflozin	8.635	6.556	5.596	5.596	5.1117
Dapagliflozin	8.635	6.556	5.596	5.596	5.1117

Table 15. Chi – square Points of HbA1c for Control, Canagliflozin and Dapagliflozin prescribed groups

Days	Day 0	Day 90	Day 180	Day 270	Day 360
Control	0.055	0.002	0.006	0.006	0.009
Canagliflozin	0.015	0	0.002	0.002	0.003
Dapagliflozin	0.015	0	0.002	0.002	0.003

We performed Chi-square test for Patients in Control, Canagliflozin and Dapagliflozin groups for HbA1c parameter. 0.122 is the calculated Chi-square value at 8 degrees of freedom and 5% level of significance (P-value: 0.7269 > 0.05 - not significant). This shows that there was slight difference but similar effect on HbA1c levels by using Control, Canagliflozin and Dapagliflozin.

Table 16. Patients with Hypoglycaemia in Canagliflozin, Dapagliflozin and Control Group Prescribed Patients

Drugs	Dual Therapy	Triple Therapy	Quadruple Therapy
Canagliflozin	3	16	19
Dapagliflozin	5	9	10
Control	36	59	164

Table 17. Expected Frequencies of Dual, Triple, Quadruple Therapies of Control, Canagliflozin and Dapagliflozin

Drugs	Dual Therapy	Triple Therapy	Quadruple Therapy
Canagliflozin	5.209	9.944	22.847
Dapagliflozin	3.29	6.28	14.43
Control	35.502	67.776	155.723

Table 18. Chi- Square Points of Dual, Triple, Quadruple Therapies of Control, Canagliflozin and Dapagliflozin

Drugs	Dual Therapy	Triple Therapy	Quadruple Therapy
Canagliflozin	0.937	3.688	0.648
Dapagliflozin	0.889	1.178	1.36
Control	0.007	1.136	0.44

We performed Chi-square test for Patients in Control, Canagliflozin and Dapagliflozin groups for Hypoglycaemia parameter. 10.283 is the calculated Chi-square value at 4 degrees of freedom and 5% level of

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significance (P-value: 0.0013 < 0.05 - significant). In accordance with hypoglycaemia as an ADR it is more in Control group than in Canagliflozin and Dapagliflozin groups which is evident with Chi – square and P – value.

Table 19. ADR's in Control Group

	Dual Therapy	**Triple Therapy**	**Quadruple Therapy**	**Total**
Weight Gain	23	48	78	147
Hypoglycaemia	36	59	164	259

Table 16. shows ADR's in Control group in which weight gain was negative effect and Hypoglycaemia was found to be more in Control group compared to Canagliflozin and Dapagliflozin prescribed groups.

Table 20. Total ADR's in Canagliflozin, Dapagliflozin and Control Groups

	Dual Therapy	**Triple Therapy**	**Quadruple Therapy**	**Total**
Canagliflozin	236	271	245	752
Dapagliflozin	178	147	162	487
Control	86	167	59	312

Table 21. Expected Frequencies of ADRs for Canagliflozin and Control

	Dual Therapy	**Triple Therapy**	**Quadruple Therapy**
Canagliflozin	227.579	309.564	214.857
Control	94.421	128.436	89.143

Table 22. Chi – square Points of ADRs for Canagliflozin and Control

	Dual Therapy	**Triple Therapy**	**Quadruple Therapy**
Canagliflozin	0.312	4.804	4.229
Control	0.751	11.579	10.193

We performed Chi-square test for Patients in Control and Canagliflozin groups for ADRs. 31.868 is the calculated Chi-square value at 3 degrees of freedom and 5% level of significance (P-value: 0.0000 < 0.05 - significant). This shows that Canagliflozin and Control groups were equally safe with the evidence of Chi – square and P – value.

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Table 23. Expected Frequencies of ADRs for Dapagliflozin and Control

	Dual Therapy	Triple Therapy	Quadruple Therapy
Dapagliflozin	174.761	289.944	146.296
Control	89.239	148.056	74.704

Table 24. Chi – square Points of ADRs for Dapagliflozin and Control

	Dual Therapy	Triple Therapy	Quadruple Therapy
Dapagliflozin	0.06	1.238	1.686
Control	0.118	2.424	3.301

We performed Chi-square test for Patients in Control and Canagliflozin groups for ADRs. 31.868 is the calculated Chi-square value at 3 degrees of freedom and 5% level of significance (P-value: 0.0030 < 0.05 - significant). This shows that Dapagliflozin and Control groups were not equally safe with the evidence of Chi – square and P – value.

Conclusion

From this study, we concluded that Patients with ADR's After Using Canagliflozin versus Dapagliflozin in which hypotension was more common ADR after using Canagliflozin whereas Dehydration was more common ADR after using Dapagliflozin. ADR's in Control group in which weight gain was negative effect and Hypoglycaemia was found to be more in Control group compared to Canagliflozin and Dapagliflozin prescribed groups whereas weight loss was positive effect in Canagliflozin and Dapagliflozin prescribed groups. In accordance with hypoglycaemia as an ADR it is more in Control group than in Canagliflozin and Dapagliflozin groups .This shows that there was slight difference but similar Safety by using Canagliflozin versus Dapagliflozin

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