

GLP-1 Receptor Agonist Usage on Complications in Patients Undergoing Surgical Treatment of Endometrial Cancer



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Introduction

- Endometrial cancer (EC) is one of the most common gynecologic malignancies, and the malignancy most strongly linked to obesity. Treatment options include surgical intervention, often in conjunction with systemic and radiation therapies.
- Glucagon-like Peptide-1 Receptor Agonists (GLP-1RAs), are a class of medications approved for the treatment of obesity and type 2 diabetes. Its mechanism of action increases glucose-dependent insulin secretion while simultaneously decreasing unnecessary glucagon secretion via stimulating GLP-1 receptors within the pancreas. Stimulated receptors within the central nervous system and GI tract also result in increased satiety and decreased gastric emptying, leading to weight loss.
- Due to recent widespread usage of GLP-1RAs, there is a growing interest in understanding how they can be integrated into care plans for obese EC survivors.
- Our aim was to describe the incidence of surgical and postoperative complications in EC patients who have undergone surgical intervention for their EC, with a specific focus on rates of complications in those receiving GLP-1RAs at the time of surgery compared to those not using these medications.**

Methods

- 76 patients diagnosed with EC from 2019-2025 were identified within an IRB approved retrospective chart review.
- Chart review was done for GLP-1RA use status, demographics, surgical details, Charleston Comorbidity Index (CCI), tumor histology and stage, molecular biomarkers, surgical approach, and complications.
- Chi-squared tests were used to compare categorical outcomes and two-sided t-tests were performed for continuous variables.

Results

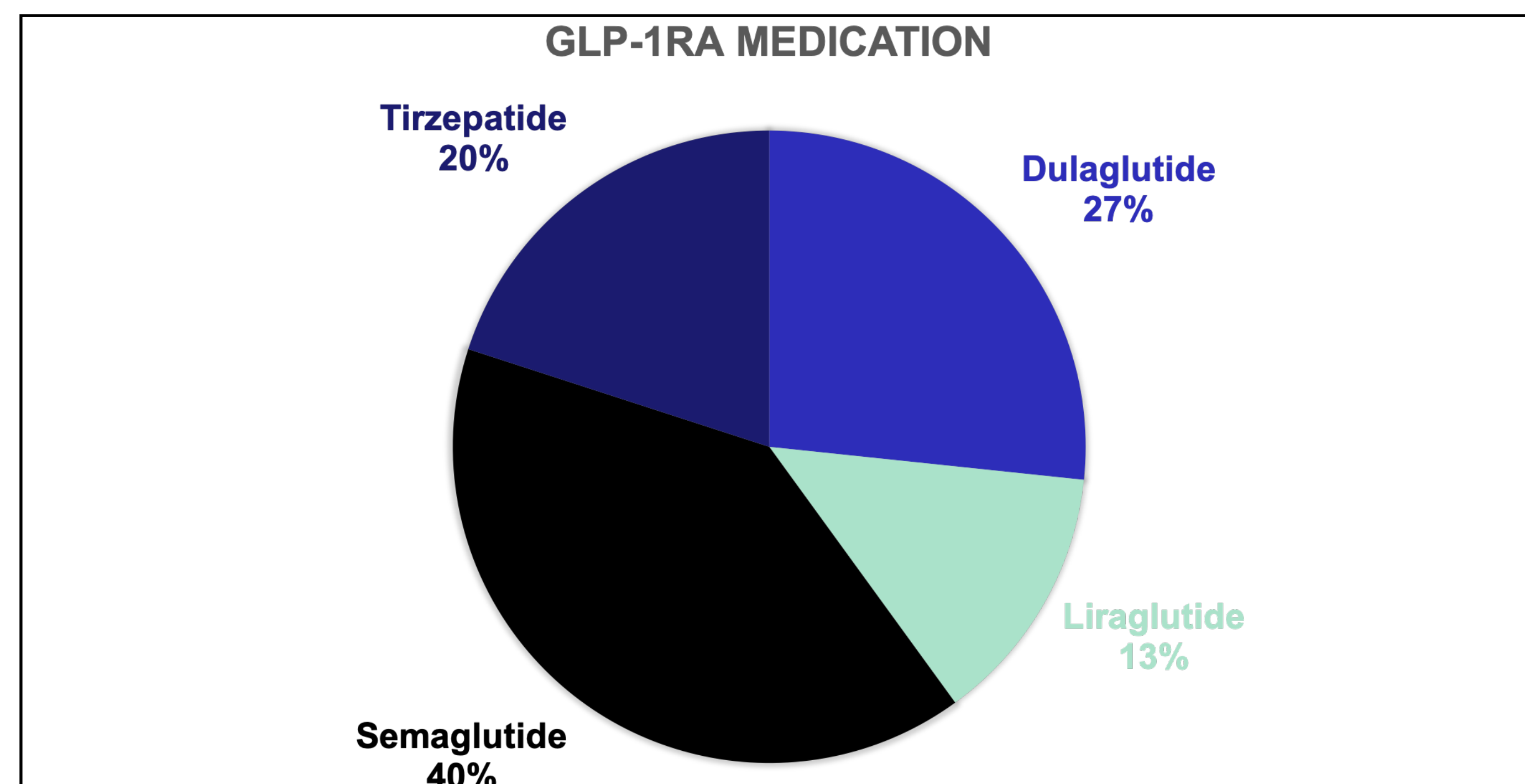


Figure 1. GLP-1RA medication distribution between users (n=15)

		GLP-1 RA Users N=15	GLP-1 RA Non-Users N=61
Mean Age		59.7 (SD=10.5)	62.4 (SD=12.9)
Race			
	White	9	26
	Black or African American	6	28
	Asian	0	2
	Native Hawaiian or Other Pacific Islander	0	1
	MENA	0	4
BMI			
	<18.5	0	1
	18.5-24.9	1	5
	25-29.9	2	14
	30-34.9	0	18
	35-39.9	2	8
	>39.9	10	15

Figure 2. Distribution of age, race, and BMI among GLP-1RA users and non-users

		GLP-1RA Users N=15	GLP-1RA Non-Users N=61
Stage			
	1	86.7%	62.3%
	2	0%	6.6%
	3	0%	18%
	4	0%	8.2%
	Unknown	13.3%	4.9%
Histology			
	Endometrioid adenocarcinoma	93.3%	72.1%
	Carcinosarcoma	0%	4.9%
	Serous	0%	16.4%
	Clear Cell	0%	4.9%
	Unknown	6.7%	1.7%
Biomarkers			
	POLE-mutation	0%	0%
	MMR-deficient	13.3%	14.75%
	P53 Abnormal	6.7%	14.8%
	P53 Wild-type	93.3%	85.2%
	HER2	0%	14.8%

Figure 3. Endometrial cancer details for GLP-1RA Users and non-users

		GLP-1RA Users N=15	GLP-1RA Non-Users N=61
Procedure			
	BSO	73.3%	70.5%
	Hysterectomy	73.3%	85.2%
	Uterine Sampling	26.7%	9.84%
	Lymph Node Dissection	66.7%	80.3%
	IUD Insertion/Removal	20%	6.6%
Approach	Cystoscopy	46.7%	29.5%
	Robot-Assisted	60%	67.2%
	Laparoscopic	13.3%	11.5%
	Laparotomy	6.7%	16.4%
Complications	Vulvar-vaginal	20%	11.5%
		0%	8.2%

Figure 4. Procedure details and complications for GLP-1RA users and non-users

Results

- 15 patients (19.7%) were on GLP-1RAs perioperatively, most commonly subcutaneous semaglutide injections (40%).
- GLP-1RA users within the database had a trend of higher occurrences of stage 1 tumors (86.7% vs. 62.3%, $p=0.195$) and a higher occurrence of endometrioid adenocarcinomas (93.3% vs 72.1%, $p=0.027$) compared to non-users.
- All GLP-1RA users had HER2 negative tumors, while non-users were HER2 negative 85.2% of the time ($p=0.074$).
- P53 signature trended towards more wildtype in GLP-1RA users than non-users (93.3% vs 85.2%, $p=0.077$).
- Complications were less common in the GLP-1RA user group than non-users, but was not significant (0% vs 6.9%, $p=0.2801$).
- There were 2 mortalities within 30 days of surgery, both following surgical endometrial sampling in medically frail patients with advanced medical comorbidities.

Conclusion

- No early indicators of significance were shown between GLP-1RA usage and complications, though overall rates of complications were quite low. A trend for an association between GLP-1RA use and p53 wildtype and HER2 negative tumors was observed, aligning with our understanding of obesity and these molecular subtypes of EC. A larger cohort is being collected and longer follow up is planned to better characterize interplay between GLP-1RA usage and EC prognosis.