Optimal Submucosal Injection for Submucosal Dissection: A Single-Center Experience

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OBJECTIVE

- Submucosal injection is an essential technique for endoscopic submucosal dissection (ESD) to lift the lesion. Not only does this facilitate en-bloc resection, but it also provides sufficient submucosa for proper pathologic evaluation of margin and lymphovascular invasion.
- Several injection agents for ESD have been developed, including ORISE Gel (Boston Scientific, MA, USA) and Eleview (Aries Pharmaceutical, CA, USA) in the United States, however, few studies have examined the clinical outcomes of each lifting agent.
- Here we compared the clinical outcomes of ORISE Gel and Eleview used during the ESD of colorectal lesions.

METHODS

- A total of 90 patients who underwent ESD were included in this retrospective cohort study. 1.5/2mm Dual-J Knife (Olympus) or 1.5mm ProKnife (Boston Scientific) were used for resection. Patients were divided into two comparison groups: ORISE group (n=36) vs Eleview group (n=54).
- The outcomes included the amount of each agent used to achieve adequate submucosal lifting, procedure time and the rest is as noted in the table. R0 resection was defined as an en-bloc resection that had microscopically negative margins.
- The two groups were compared using the Independent t-tests and chi-square tests.

BASELINE CHARACTERISTICS

		Eleview (n=54)	Orise (n=36)
Age, y, median (IQR)		58 (54.5-66.5)	64 (56.3-73.0)
Sex, men/women, n		31/23	18/18
Lesion size,mm, median (IQR)		31 (22.3-44.8)	29.5(20.0-34.0)
ASA grade, n (%)	I	2 (3.7)	0 (0)
	II	24 (44.4)	9 (25.0)
	III	26 (48.1)	27 (75.0)
	IV	2 (3.7)	0 (0)
Lesion site, n (%)	Iloececal valve	5 (9.3)	2 (5.6)
	Cecum	15 (27.8)	9 (25.0)
	Ascending colon	11 (20.4)	6 (16.7)
	Hepatic flexure	2 (3.7)	0 (0)
	Transverse colon	9 (16.7)	11 (30.6)
	Splenic flexure	1 (1.9)	0 (0)
	Descending colon	3 (5.6)	2 (5.6)
	Sigmoid colon	8 (14.8)	6 (16.7)
Anesthesia, n (%)	Profopol	23 (42.6)	24 (66.7)
	General anesthesia	31 (57.4)	12 (33.3)
Histology, n (%)	Nondyspastic colon mucosa	25 (46.3)	14 (38.9)
	Low-grade dysplasia	0	5 (13.9)
	High-grade dysplasia	16 (29.6)	9 (25.0)
	pT1a	2 (3.7)	3 (8.3)
	pT1b	7 (13.0)	2 (5.6)
	Sessile serrated polyp	1 (1.9)	3 (8.3)
	Sessile serrated polyp with dysplasia	3 (5.6)	0 (0)

OUTCOMES

		Eleveiw	Orise	p-value
Amount of injection mL, median (IQR)		65.5 (40.0-100.0)	30 (20.0-48.0)	<0.001
Procedure time min, median (IQR)		120 (90.0-168.75)	90 (73.75-142.5)	0.05
En bloc, n (%)		38 (70.4)	28 (77.8)	0.48
R0 resection, n (%)		32 (59.3)	22 (61.1)	0.83
Hospital length of stay d, mean ± SD		1.39±2.406	1.03 (0.7)	0.39
Advese event, n (%)		6 (11.1)	6 (16.7)	0.53
Type of adverse event	Delayed bleeding	5 (9.3)	2 (3.7)	
	Perforation	1 (1.9)	0 (0)	
	Infection	0 (0)	1 (1.9)	
	Hypotension	0 (0)	2 (3.7)	

RESULTS

- The ORISE group had a significantly lower amount of agent used (30mL vs 65.5ml, p<0.001) and shorter procedure time (90.0min vs 120.0min, p=0.05) when compared with the Eleview group, while there was no difference in en-bloc resection, R0 resection rate, hospital length of stay, or adverse events.

CONCLUSIONS

- Comparing the Eleview group to the ORISE group, the ORISE group was associated with a significantly lower amount of gel used for submucosal lifting and shorter procedure time while there were no differences for en-bloc resection or R0 resection rates, hospital length of stays, and adverse events.
- Further study is warranted to investigate the clinical outcomes of different lifting agents used for ESD.

REFERENCES

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