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**Tkachov Vladyslav** 

PhD student of the Faculty Surgery and Oncology Department  
*Zaporizhzhia State Medical and Pharmaceutical University, Ukraine*

**Kiosov Oleksandr** 

PhD, assistant of the Department of General Surgery and Postgraduate Surgical Education  
*Zaporizhzhia State Medical and Pharmaceutical University, Ukraine*

**Klymenko Andrii** 

MD, PhD, DSc, Professor of the Faculty Surgery and Oncology Department  
*Zaporizhzhia State Medical and Pharmaceutical University, Ukraine*

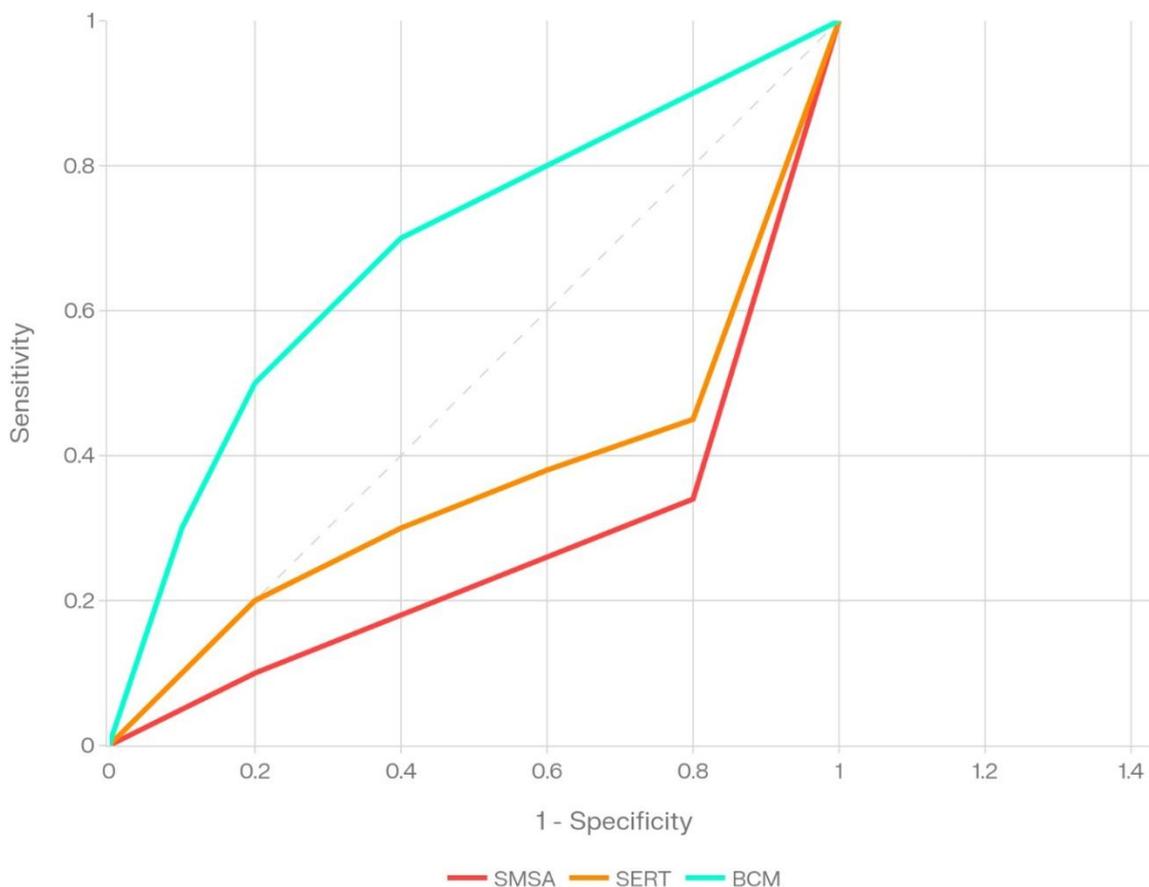
## COMPARISON OF PREDICTIVE MODELS FOR RECURRENCE AFTER ENDOSCOPIC RESECTION OF LATERALLY SPREADING LESIONS $\geq 20$ MM

**Introduction.** Local recurrence remains a key limitation of endoscopic resection for large colorectal neoplasms [1]. Over 90% of recurrences after endoscopic removal are detected at first surveillance colonoscopy and are usually amenable to repeat endoscopic therapy [2]. Structured endoscopic scoring systems such as SMSA (size, morphology, site, and access) [3], SERT (Sydney EMR recurrence tool) [4], and BCM (Baylor College of Medicine) [5] have been developed to quantify lesion complexity and predict recurrence risk. Although models SERT and BCM were originally created to assess recurrence after removal by endoscopic mucosal resection (EMR), their universal parameters allow them to be used after other methods of endoscopic removal. These tools enable personalized surveillance strategies, optimizing follow-up timing and resource use, while their accuracy for large ( $\geq 20$  mm) laterally spreading lesions (LSLs) remains an open question.

**Materials and methods.** A total of 105 patients with colorectal laterally spreading lesions (LSLs)  $>20$  mm in diameter were included in the study. 70 lesions were granular type (LSL-G) and 35 were non-granular (LSL-NG). All lesions underwent expert evaluation using image-enhanced endoscopy [6] and standardized classification systems [7, 8] to characterize surface pit and vascular patterns. Resection was performed by en bloc EMR, piecemeal EMR, endoscopic submucosal dissection (ESD), or hybrid ESD, depending on lesion size and morphology. Surveillance colonoscopy with detailed assessment of the resection site and post-resection scar was conducted at six months. Recurrence was defined as histologically confirmed neoplastic tissue consistent with the original lesion,

located at or adjacent to the resection site. All recurrences were managed successfully with repeat endoscopic intervention. Statistical analysis was performed using Statistica 13. Logistic regression was applied to evaluate associations between predictive model scores (SMSA, SERT, BCM) and binary complication outcomes. Model performance and discriminatory ability were assessed by receiver operating characteristic (ROC) analysis with area under the curve (AUC). The optimal cutoff for clinical use was determined by Youden's J statistic, maximizing the sum of sensitivity and specificity.

**Results.** 0 recurrences were observed among non-granular LSLs. In the granular LSLs group, recurrence at the post-resection scar occurred in 8 patients (11.43%). Therefore, all subsequent recurrence analyses were performed exclusively for LSL-G lesions.



**Fig. 1. ROC curves of recurrence prediction models with corresponding areas under the curve (AUC)**

As shown in Figure 1, the BCM model demonstrated the best performance for recurrence prediction, exhibiting good discriminative ability (AUC = 0.782) with an optimal cutoff value of  $\geq 1$  point, sensitivity of 66.7%, and specificity of 80.57%.

Thus, a BCM score  $\geq 1$  was significantly associated with an increased risk of recurrence. The SERT model had an AUC of 0.374 and the SMSA model an AUC of 0.313, indicating low, no better than chance prognostic value.

### Conclusions.

1. In the long-term postoperative period, granular LSLs demonstrate a higher recurrence rate compared to non-granular subtypes.

2. The BCM recurrence prediction model shows strong prognostic performance following endoscopic removal of large LSLs, regardless of the resection technique. A BCM score  $\geq 1$  indicates a significantly increased risk of recurrence and should prompt closer surveillance.

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