

Table S1 Detail of ERAS protocol in the University Medical Center Ho Chi Minh City

No.	Phase	Action	ERAS care
1	Preoperative phase	Provide information and health education to patients	<p>Provide information on the ERAS program using a specifically designed brochure</p> <p>Explain the medical condition and treatment methods clearly using a specially designed consultation leaflet</p> <p>Encourage patients to read the “Healthy Living” magazine or lung cancer information leaflets from the patient room’s magazine rack</p>
2		Conduct nutritional assessments and interventions	Assess nutritional status using a checklist and intervention if indicated. The checklist must be attached to the EMR and completed before proceeding with further procedure
3		Counsel to smoking cessation	<p>Provide information and advice on smoking cessation using a counseling form</p> <p>Patients are required to smoking cessation for at least 4 weeks before surgery</p>
4		Counsel on stopping alcohol and stimulant use	<p>Provide information and disease counseling using a consultation form</p> <p>Patients stop smoking for at least 4 weeks before surgery</p>
5		Assess anemia status	Patients are assessed for anemia and receive blood transfusions when indicated
6		Perform respiratory physiotherapy exercises before surgery	The patient will be assessed by a rehabilitation doctor and guided by a technician to perform exercises at least once a day before surgery
7		Assess the risk of venous thromboembolism	Patients are assessed for the risk of venous thromboembolism using a checklist
8		Adjust and optimize organ function before surgery	Conduct comprehensive examinations by all relevant specialties and provide recommendations on managing underlying conditions before, during, and after surgery
9		Avoiding fasting	Solid food: 6 hours; clear liquids: 2 hours before surgery
10		Consume a carbohydrate drink 2 hours before surgery	Patients are given a carbohydrate drink 2 hours before surgery
11		Avoid using opioids before surgery	Opioids are not prescribed before surgery
12		Hair removal and antiseptic wash	<p>Patients have the surgical area shaved if necessary</p> <p>Patients are given chlorhexidine solution to use for body cleansing the night before and the morning of surgery</p>

Table S1 (continued)

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No.	Phase	Action	ERAS care	
13	Intraoperative phase	Use prophylactic antibiotics	Prophylactic antibiotics are administered intravenously within 60 minutes before skin incision	
14		Use multimodal analgesia	Combine baseline analgesia with epidural anesthesia or erector spinae plane block Ketamine is considered for patients with preexisting chronic pain	
15		Insert proper urinary catheter placement	Insert a urinary catheter only when indicated for urine monitoring (patients with renal failure or other medical conditions requiring urine monitoring)	
16		Do not insert a nasogastric tube	Do not insert a nasogastric tube	
17		Apply minimally invasive surgery and limit muscle cutting if open surgery is performed	All patients indicated for lobectomy should be prioritized for initial thoracoscopic access if there are no contraindications	
18		Monitor body temperature and provide warming	Body temperature is monitored, and warming measures are applied	
		Warm intravenous fluids and blood products	Intravenous fluids are warmed using a fluid warming device	
		Warm pleural cavity irrigation fluids	Pleural cavity irrigation fluids are warmed	
19		Prophylaxis for nausea and vomiting	Proactively prevent vomiting with antiemetic medication	
20		Optimize intravenous fluid management	Controlled fluid infusion	
			Stop IV fluids when the patient begins eating and drinking	
21		Use short-acting muscle relaxants, reverse muscle relaxation, and extubate in the operating room	The patient is extubated in the operating room, and muscle relaxants are reversed	
22		Postoperative phase	Prevent atrial fibrillation	Beta-blockers for atrial fibrillation prevention should be continued during the perioperative period
23			Conduct early physical and rehabilitation therapy after surgery	Patients are instructed in mobility exercises and respiratory physiotherapy within 24 hours after surgery
24	Provide early postoperative nutrition		Patients begin early oral intake after surgery	
25	Monitor pain scores and administer multimodal analgesia		Patients are assessed for pain using the VAS scale and medications are adjusted according to pain levels	
26	Remove drains at the appropriate time		Drains are removed as soon as possible when the output is less than 450 mL/24 hours	
27	Perform physical and rehabilitation therapy in the surgical ward		Patients are guided in respiratory physiotherapy and mobility exercises at least once a day after surgery	

ERAS, enhanced recovery after surgery; EMR, electronic medical record; IV, intravenous; VAS, visual analogue scale.