

# COST-EFFECTIVENESS OF CONTOUR CURVED CUTTER STAPLER IN LOW ANTERIOR RESECTION IN TURKEY

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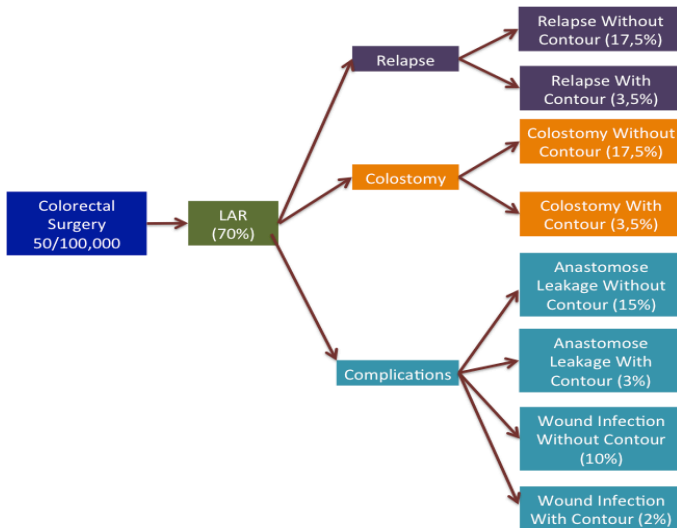
## OBJECTIVES

Contour Curved Cutter Stapler is a multi-fire, single patient use device with a curved head that cuts and staples. The device is used for transection, resection, and/or creation of anastomoses. The instrument has application in multiple open or minimally invasive general (gastrointestinal and skeletal muscle), gynecologic, urologic and thoracic surgical procedures. The objective of this study is to assess the cost-effectiveness of Contour in low anterior resection (LAR) in Turkey.

## METHODS

A simple decision making model was used in assessing the cost-effectiveness of Contour (Figure 1). Use of Contour was compared with non-use. The ICER was calculated as additional cost per avoided complication. All analyses were made from the perspective of the Social Security Institution (SSI). Cost data regarding the type and frequency of resources used before, during and after LAR and in treatment of complications with and without Contour were obtained from expert views. Costs of treatments were calculated by using the price lists of the SSI. Complications were listed as recurrence, colostomy, anastomose leakage and wound infection. Epidemiologic data and complication rates were obtained from literature and expert views.

Figure 1: Contour Curved Stapler Decision Model



The following information from expert views were used in calculations

1. The ratio of LAR patients within rectal surgery is 70%.
2. 50% of LAR is made manually, 50% is made by using a stapler.
3. Average age of patients undergoing LAR is 50+ and five year survival rate after surgery is 60%. Survival duration after surgery is taken as 5 years.
4. Recurrence rate in LAR is 17,5%.
5. Anastomose leakage in LAR is 15%.
6. Wound infection in LAR is 10%.
7. Success rate with Contour is taken as 80%.

## FINDINGS

Table 1: Epidemiologic Data and Number of Patients

Total Population	78,741,053
Rectal Cancer Incidence (%)	0.05
% of LAR	70
% of LAR using stapler/roticulator	50
Patients with rectal cancer	39,898
Number of patients with LAR	27,929
Number of patients with LAR using stapler/roticulator	13,964

Table 2: Number of Relapsed Patients, Complications and Costs

	Stapler	Contour	No of Prevented Relapses and Prevented Cost
No of Patients With LAR	13,964	13,964	
Cost of LAR (With Stapler) (TRY)	22,020,355	40,418,363	
No of Patients With Relapse	2,444	489	1,955
Cost of Relapse (TRY)	3,086,344	617,269	2,469,075
No of Colostomy Patients	2,444	489	1,955
Cost of Colostomy (TRY)	62,633,520	12,526,704	50,106,816
No of Patients With Anastomose Leakage	2,095	419	1,676
Cost of Anastomose Leakage (TRY)	8,752,924	1,750,585	7,002,339
No of Patients With Wound Infection	1,396	279	1,117
Cost of Wound Infection (TRY)	1,281,925	256,384	1,025,541

Table 3: Number of Patients and Total Costs With and Without Contour

	No of Patients	Cost of Complications (TRY)	Total Cost (TRY)
With Contour	13,964	15,150,943	55,569,305*
	No of Patients With Complications	No of Prevented Complications With Contour	
	1,676	6,703	
Without Contour	13,964	75,754,713	97,775,068**
	No of Patients With Complications	No of Prevented Complications	
	8,379	0	

\*Cost of complications + (no of patients (13,964)\*Cost of LAR + Contour to the SSI (2,894TRY))

\*\* Cost of complications + (no of patients (13,964)\* Cost of LAR+ Stapler to the SSI (1,577 TRY))

Table 4: Cost Effectiveness Analysis of Contour Curved Cutter Stapler in LAR in Turkey

LAR	No of Complications	No of Prevented Complications	Total Cost (TRY)	Incremental Cost (TRY)	ICER
With Contour	1,676	6,703	55,569,305	-42,205,763	DOMINATES
Without Contour	8,379		97,775,068		

## RESULTS

Total cost per patient of LAR with Contour stapler was found as 2,894 TRY. Total number of LAR patients for 2017 was estimated as 13,694. Of these patients, 8,379 had complications if Contour is not used whereas 1,676 patients had complications when Contour is used. The total annual costs of operations including cost of complications were 55,569,305 TRY and 97,775,068 TRY for LAR with Contour and LAR without Contour respectively. With these results, LAR with Contour dominated LAR without Contour in Turkey.

## CONCLUSION

These results showed that LAR with Contour is a cost-effective option for Turkey.