

Possible impact of anastomosis onto surgical & oncological outcome in resection of primary colon cancer (CA) - data obtained from a prospective multicenter observational study

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Patients & Methods

Tracer diagnosis: Colon Ca
Design: Systematic, prospective, multicenter clinical observational cohort study

Clientele: Appr. 10,000 pat.
Centers: n = 111
Observation period: 3 yrs.

Parameters:

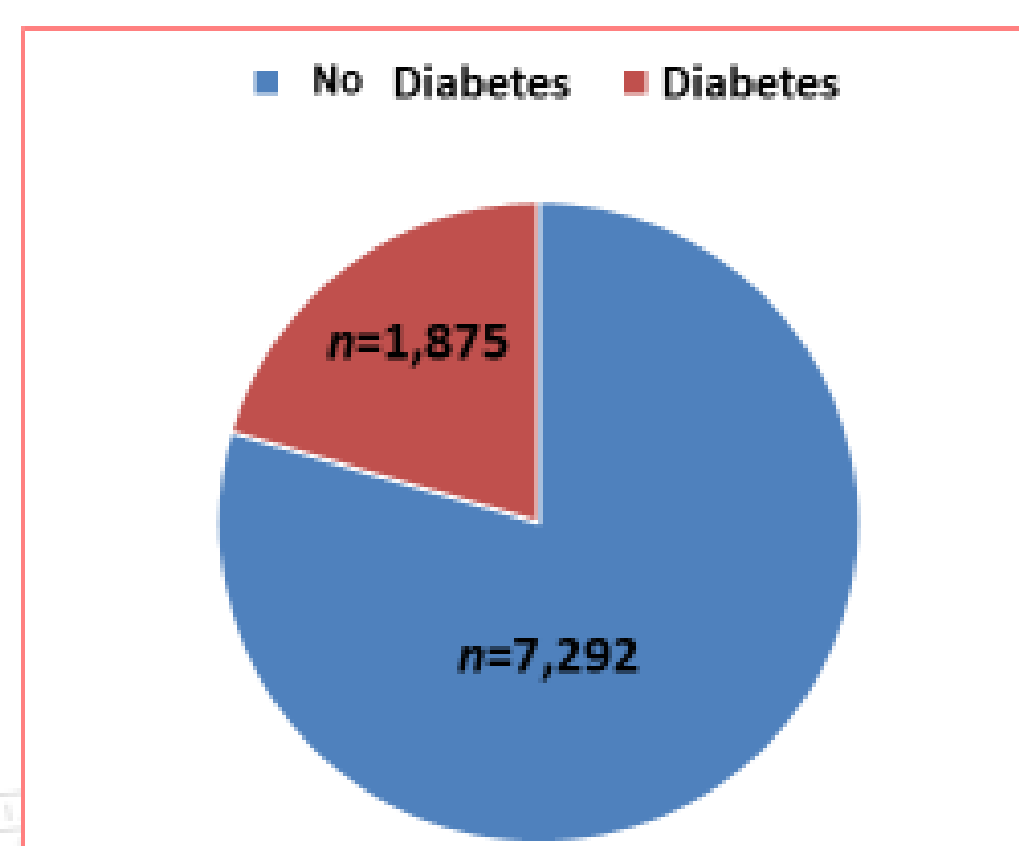
- Morbidity with its general & specific postop. complications
- In-hospital lethality
- Endogenous risk factors
- Periop. management
- Histopathology (Tu stage, grading etc.)
- Diagnostic profile
- Type of surgery

Statistics: Descriptive
To be tested: Survival (Kaplan-Meier assessment, log-rank test)
- Determining influencing factors (logistic regression for multivariate analysis)



RESULTS

- In total (n_{valid pat.} = 9,167; n_{non-valid} = 107) -



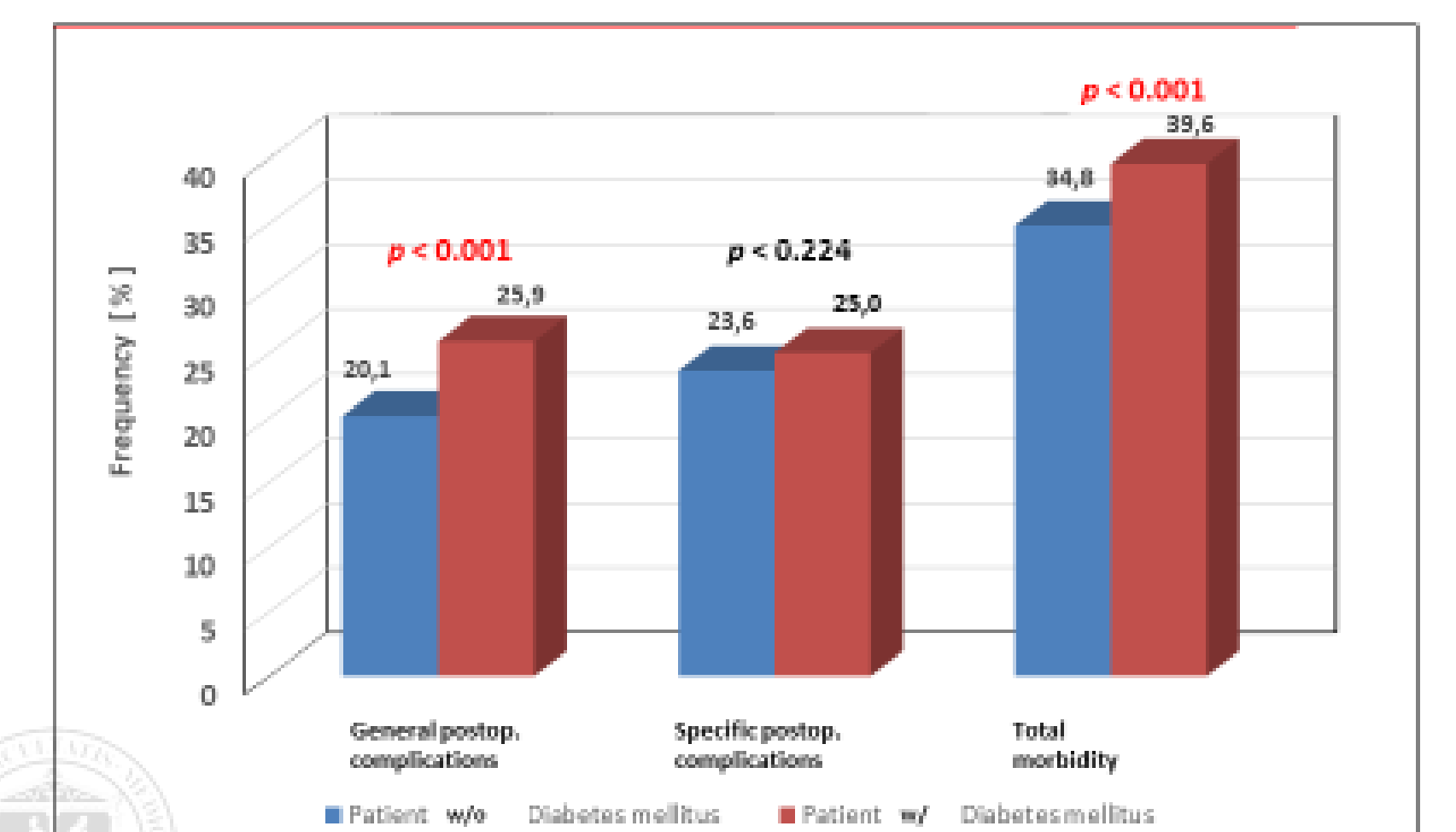
Proportion:
- 79.5 % (-) Diabetes mellitus
- 20.5 % (+) Diabetes mellitus
(thereof, 37.8 % insulin-dependent)

Mean age:
- 70.6 (-) Diabetes mellitus
- 73.7 (+) Diabetes mellitus
[range, 18-98/94-97] years
- p < 0.001

"Sex ratio"
[male: female]:
56.2 / 43.8 % vs.
52.9 / 47.1 %
- p < 0.012

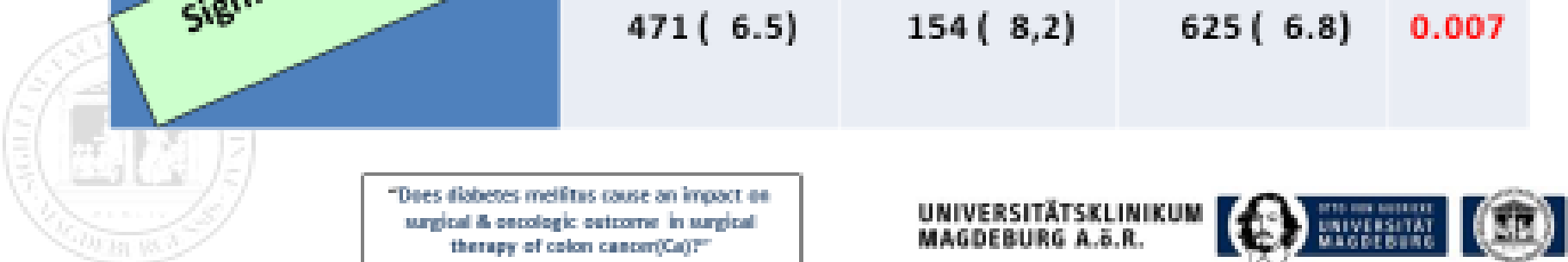


RESULTS (2) - Early postop. outcome - Morbidity -



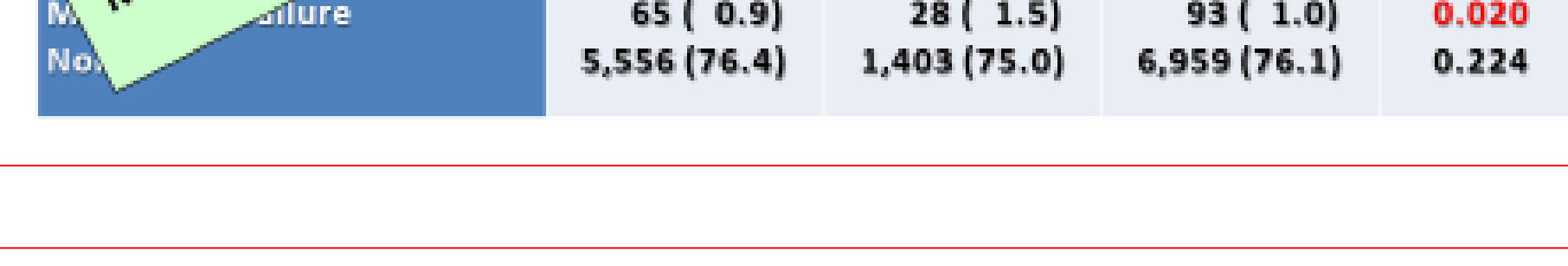
RESULTS (3) - Early postop. outcome - General complications (Fisher's exact test) -

ASPECT	DM		In total	p value
[n (%)]	(-)	(+)		
General postoperative complications				
Pulmonary embolism	49 (0.7)	14 (0.7)	63 (0.7)	0.66
Pulmonary complications	304 (4.2)	10 (0.5)	314 (3.4)	0.022
Pneumonia	350 (4.8)	10 (0.5)	360 (3.9)	0.088
Urinary tract infection	269 (3.7)	10 (0.5)	279 (3.0)	0.015
Fever	230 (3.1)	10 (0.5)	240 (2.6)	0.208
Cardiac	21 (0.3)	473 (5.2)	494 (5.4)	0.004
Renal	74 (1.0)	234 (2.6)	308 (3.3)	0.000
Thrombosis	5 (0.0)	29 (0.3)	34 (0.4)	0.668
Multiple organ dysfunction	121 (1.7)	44 (2.4)	165 (1.8)	0.046
Non-surgical	5,811 (79.9)	1,385 (74.1)	7,196 (78.7)	0.000
Surgical	471 (6.5)	154 (8.2)	625 (6.8)	0.007



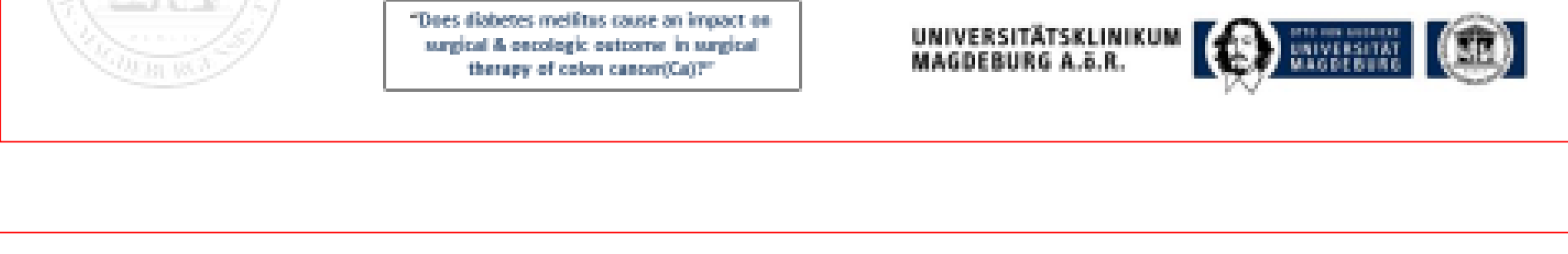
RESULTS (4) - Early postop. outcome - Specific complications (Fisher's exact test) -

ASPECT	DM		In total	p value
[n (%)]	(-)	(+)		
Specific postoperative complications:				
Failure of wound healing	165 (2.3)	69 (3.7)	234 (2.6)	0.000
Wound infection	353 (4.9)	102 (5.5)	455 (5.0)	0.285
Wound abscess	180 (2.5)	46 (2.5)	226 (2.5)	0.972
Post-bleeding	68 (0.9)	17 (0.9)	85 (0.9)	0.918
Anastomotic leakage	386 (5.3)	9 (0.5)	395 (4.3)	0.697
Complications of colostomy	19 (0.3)	2 (0.1)	21 (0.2)	0.659
Burst abdomen	18 (0.2)	47 (2.5)	65 (0.7)	0.977
Atony	87 (1.2)	47 (2.5)	134 (1.5)	0.246
Mechanical ileus	16 (0.2)	16 (0.9)	32 (0.4)	0.749
Enteric fistula	18 (0.2)	10 (0.5)	28 (0.3)	0.045
Intraabdominal abscess	68 (0.9)	23 (1.2)	91 (1.0)	0.251
Peritonitis	154 (2.1)	44 (2.4)	198 (2.2)	0.532
Septic shock	95 (1.3)	34 (1.8)	129 (1.4)	0.094
Mortality	65 (0.9)	28 (1.5)	93 (1.0)	0.020
Non-surgical	5,556 (76.4)	1,403 (75.0)	6,959 (76.1)	0.224

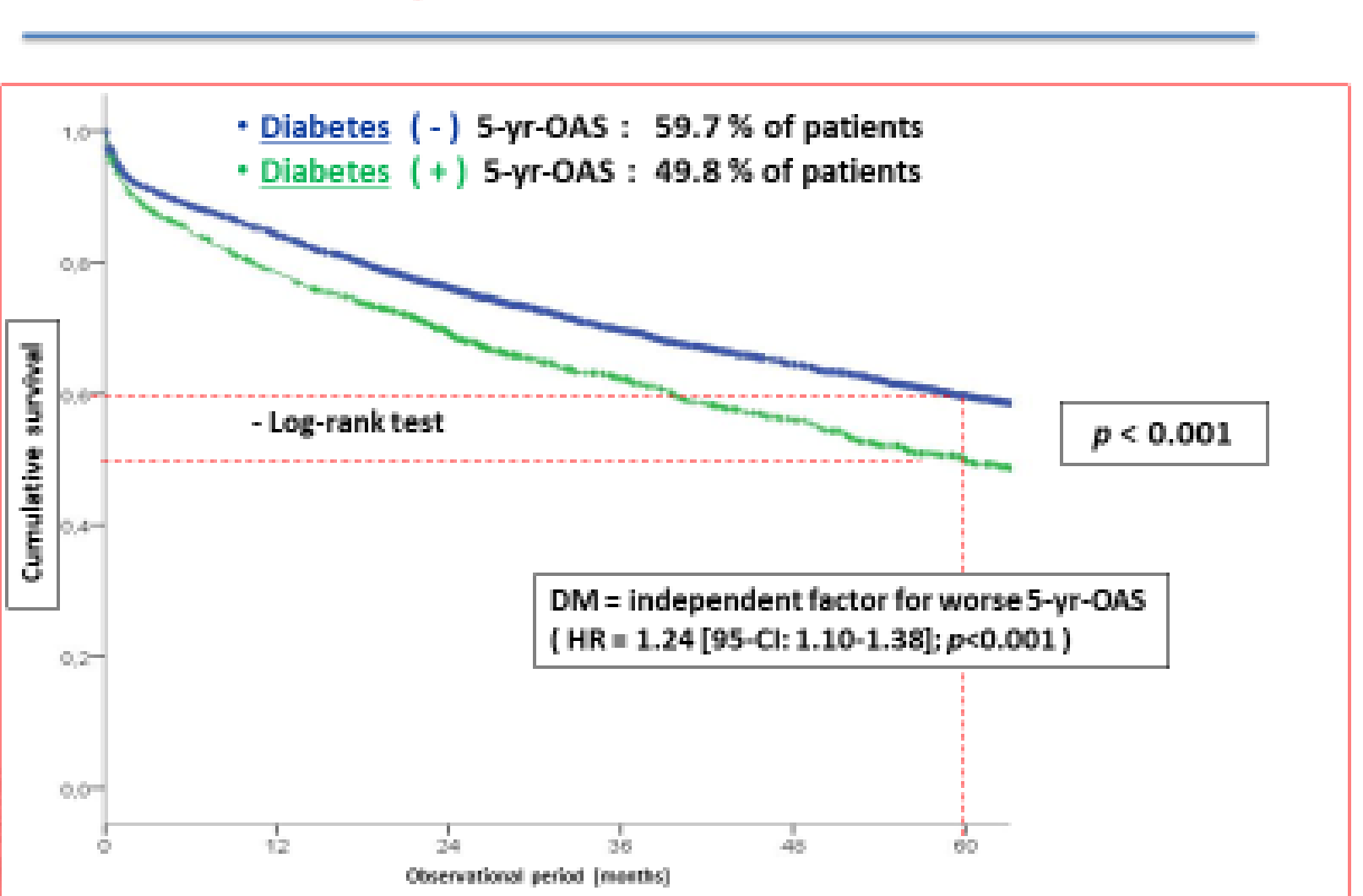


RESULTS (5) - Early postop. outcome - Morbidity - Influencing Factors (multivariate Analysis) -

ASPECT	DM		In total	p value
[n (%)]	(-)	(+)		
At least one risk factor	5,325 (73.0)	1,875 (100.0)	7,200 (78.9)	0.001
At least one general postop. complication	1,464 (20.1)	485 (25.9)	1,949 (21.3)	0.001
At least one specific postop. complication	1,719 (23.9)	667 (35.6)	2,386 (26.2)	0.224



RESULTS (6) - Long-term oncosurgical outcome - 5-yr overall survival (5-yr-OAS) -

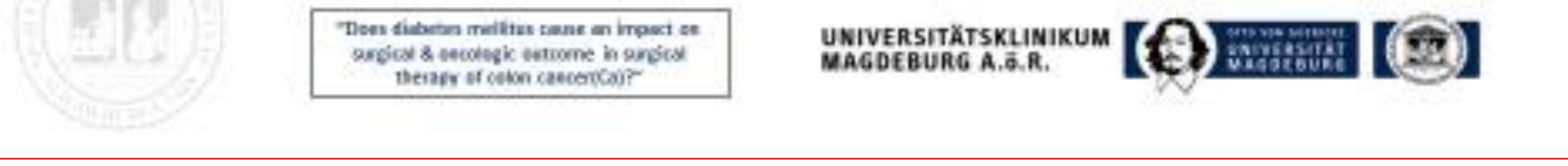
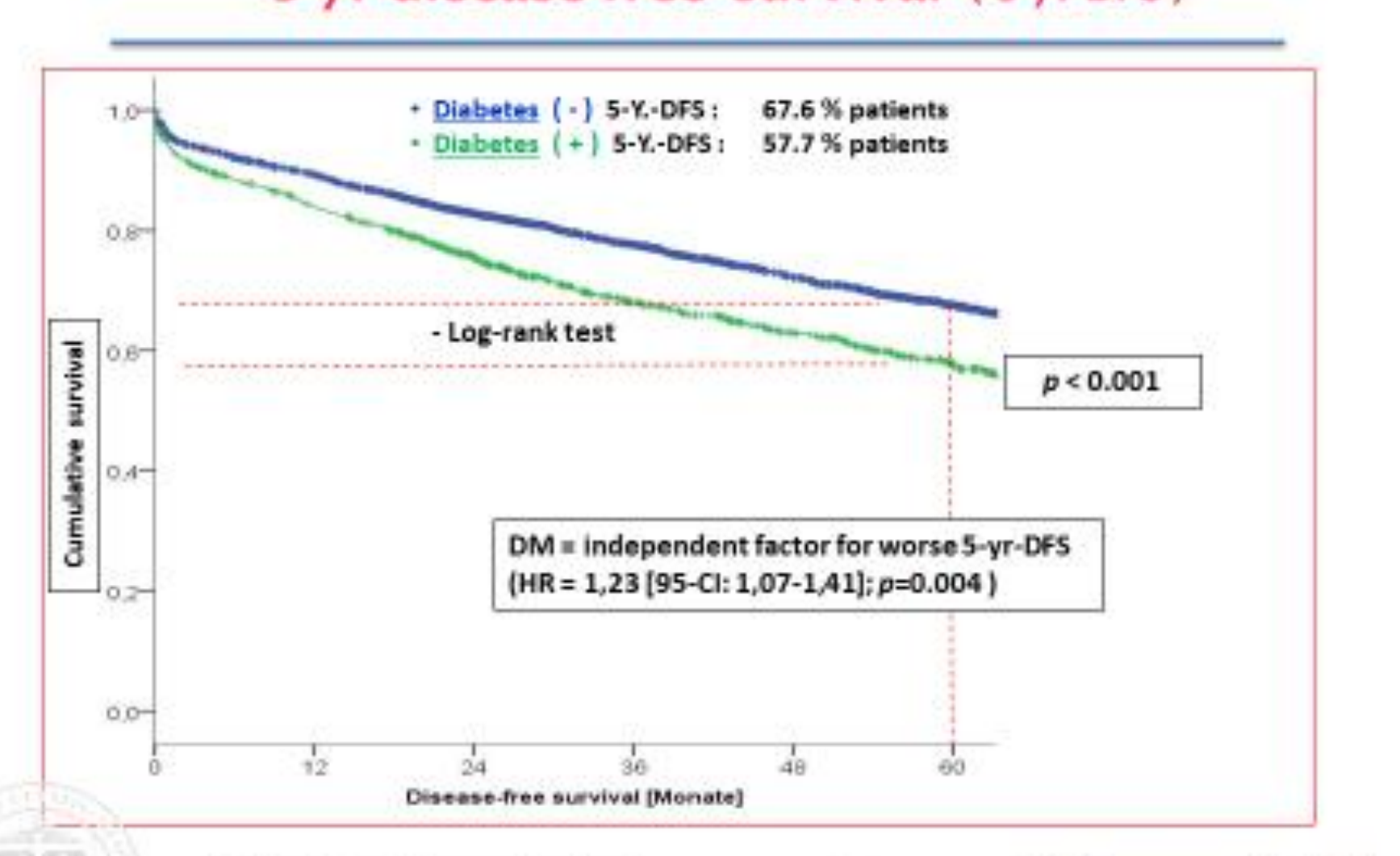


RESULTS (7) - Long-term oncosurgical outcome 5-yr-OAS → Influencing-Factors (-) Diabetes

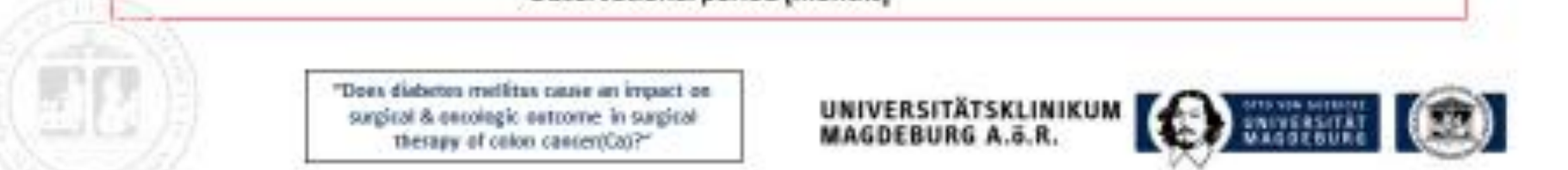
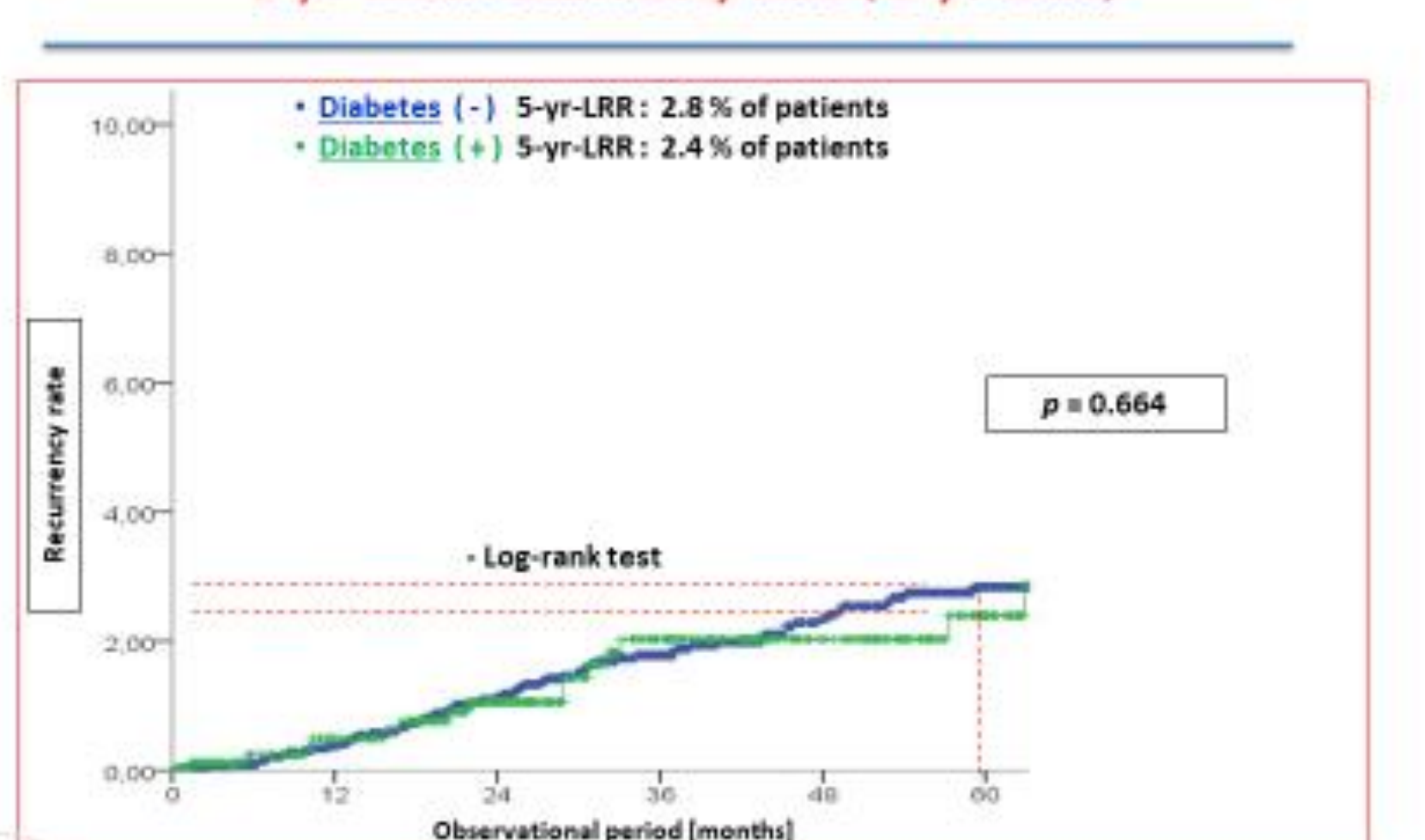
ASPECT	Odds Ratio	95%-KI	p-value
Reference: Laparoscopy			
Laparotomy	1.431	1.184; 1.681	< 0.001
Reference: G1			
G2	1.238	0.831; 1.844	0.004
G3	1.404	1.004; 1.958	0.003
G4	2.388	1.681; 3.388	0.004
Reference: pT1			
pT2	1.335	1.087; 1.631	0.006
pT3	1.538	1.278; 1.831	0.001
pT4	2.933	2.181; 3.933	< 0.001
Reference: N0			
N1	1.387	1.087; 1.731	< 0.001
N2	1.678	1.278; 2.178	< 0.001
Reference: Normal weight			
Underweight	1.880	1.333; 2.652	0.004
Overweight	1.579	1.341; 1.859	0.001
Obesity	1.282	1.088; 1.510	0.003
Reference: No Morbidity			
Morbidity	1.290	1.082; 1.537	0.005
Reference: No Mortality			
Mortality	1.633	1.288; 2.076	0.001
	1.995	1.487; 2.676	< 0.001
	3.524	2.431; 5.087	< 0.001
Reference: No Morbidity & Mortality			
Morbidity & Mortality	1.919	1.510; 2.439	< 0.001
	1.805	1.434; 2.286	< 0.001



RESULTS (8) - Long-term oncosurgical outcome - 5-yr-disease-free survival (5-yr-DFS) -



RESULTS (9) - Long-term oncosurgical outcome - 5-yr-local recurrence rate (5-yr-LRR) -



RESULTS (10) - Comparison of colon vs. rectum Ca

	Colon Ca	Rectum Ca [GEBAUER et al.]
Rate of complications		
- General	Higher for DM*	Higher for DM*
- Specific	No influence	Higher for DM*
Morbidity	Higher for DM*	Higher for DM* (65 - 74 yr)
Hospital lethality	Higher for DM*	Higher for DM* (< 65 yr)
5-yr-OAS	Worse for DM*	Worse for DM*
5-yr-DFS	Worse for DM*	Worse for DM*
5-yr-LRR	No influence	No influence



DISCUSSION

Diabetes is most likely - besides the patient's own risk potential - a relevant influencing factor on the surgical outcome of colorectal Ca.
Postop. morbidity & lethality are significantly higher in diabetics than in patients w/o DM.
The oncosurgical outcome is repressed as well.

