Diagnostic value of urine EN-2 for the detection of bladder cancer

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Introduction

According to World Cancer Research Fund International* bladder cancer (BC) is the 9th most common cancer worldwide. It is the 6th most common cancer in men and the 17th most common cancer in women.
There were more than 614,298 new cases of BC in 2022. According to statistic data in Kazakhstan bladder cancer is 23rd most common cancer in general population.
Early diagnosis and timely prevention of oncological diseases, including bladder cancer, remain critical challenges in modern medicine

Objectives

To investigate risk factors and determine the effectiveness of EN2 for early diagnostics of bladder cancer.

Methods

In our study, the inclusion criteria in the experimental group were patients with bladder cancer who had histological verification of the diagnosis.
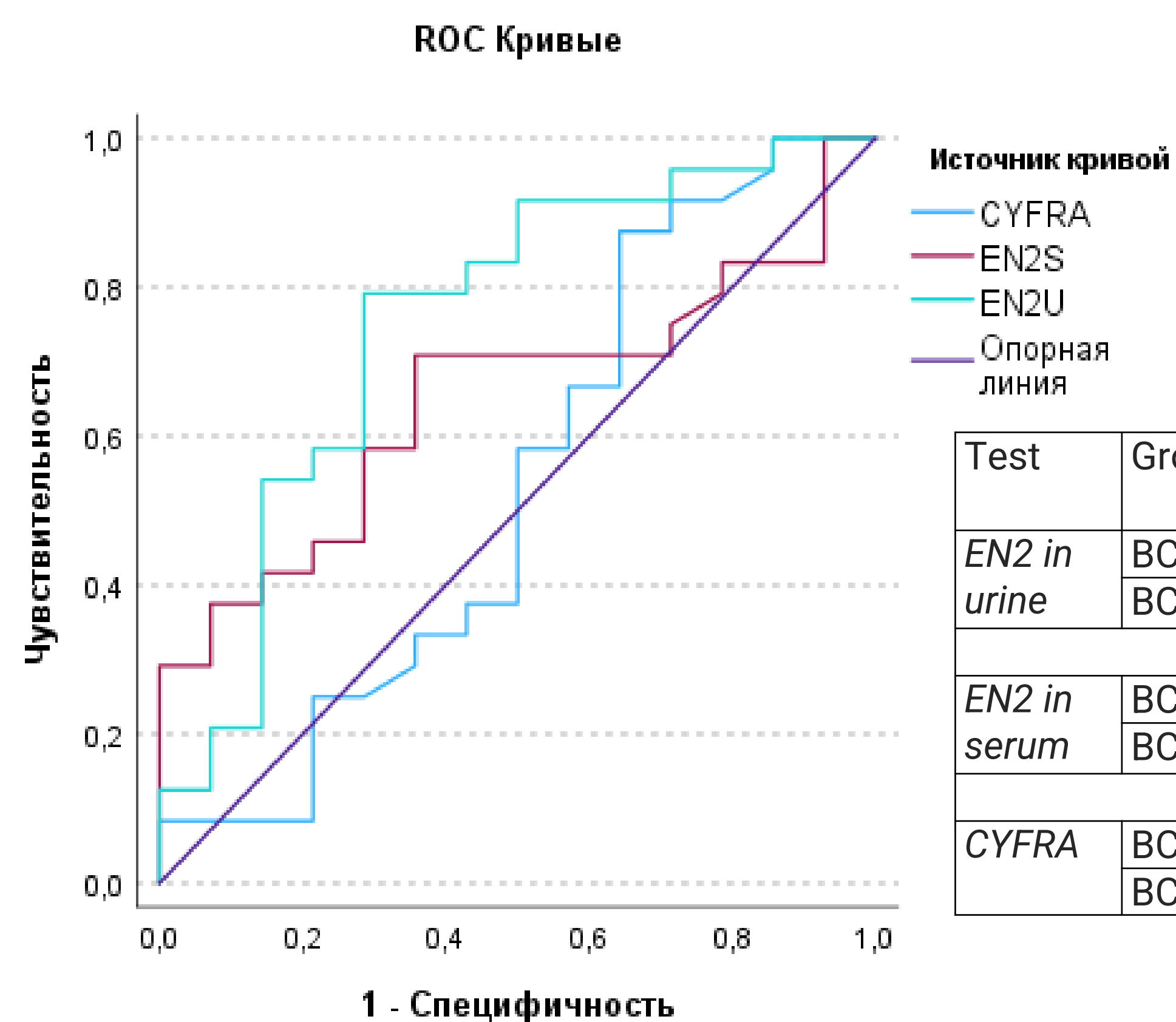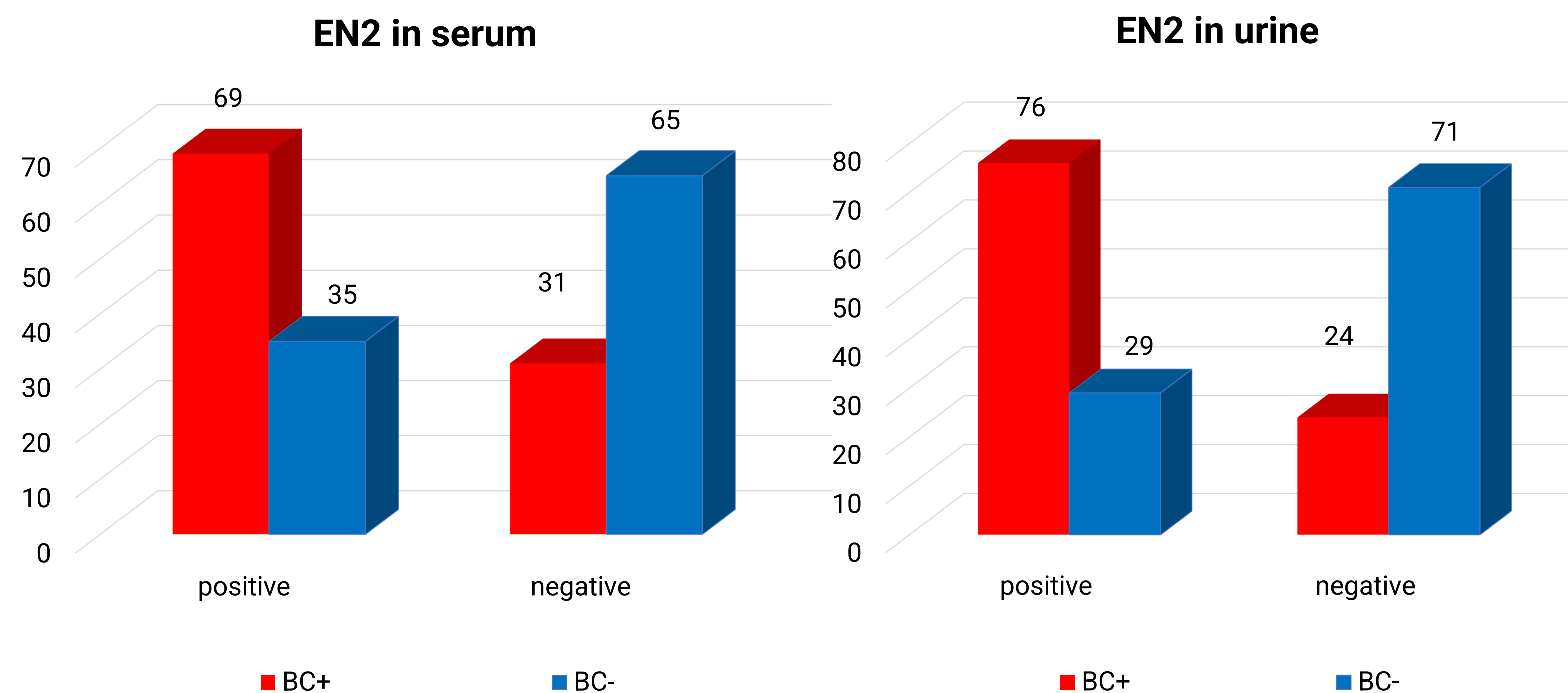Patients with bladder cancer without histological verification of the diagnosis were excluded from the study
We observed 43 subjects, of which:
• Group 1 – 26 patients with bladder cancer
• Group 2 – 17 at risk, with chronic urinary tract diseases
The obtained data were analyzed using the IBM SPSS Statistic 29.0 software package.
To assess the significance of differences in groups we have used:
• calculation of OR values and 95% confidence interval;
• ROC analysis of statistically significant variables
• area under the curve (AUC)

Results

Test	Group	negative	positive	Se	Sp	Cut-off	AUC
EN2 in urine	BC-	10	4	79%	71%	1,62000	0,753
	BC+	5	19				
EN2 in serum	BC-	9	5	71%	64%	1,987	0,650
	BC+	7	17				
CYFRA	BC-	5	9	88%	36%	0,7797	0,533
	BC+	3	21				

Conclusions

1. According to laboratory test indicators in the group of patients with BC, the tumor marker EN2 in the serum was 2 times (69% and 35%, respectively), and EN2 in the urine 2.6 times (76% and 29%, respectively) more often showed a positive result than in patients without BC.
2. Although the sensitivity of CYFRA 21-1 is higher compared to EN2 (88% versus 71% and 79%, respectively), the specificity of CYFRA 21-1 was 36%; EN2 in both serum and urine showed high specificity of 64% and 71%, respectively, indicating high diagnostic efficiency of EN2.
3. At the moment, work on our research is still ongoing, we want the use of biomarkers (including modern and more specific ones) to be used for early diagnosis and prevention of bladder cancer.

References

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