Is diabetes an independent risk factor of perioperative complications after abdominal gynecologic interventions?

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INTRODUCTION: Diabetes is a first non-infectious epidemic (World Health Organization, WHO). At present: 387 million people in the world are affected by the disease, in the year 2025 their number may exceed 590 million. Diabetic patients constitute 12-25% of all hospitalized patients (American Diabetes Association, ADA). Surgery procedures in these patients account 5-8% of all surgical interventions. 25% of diabetic patients are operated at least once in their life time.

PURPOSE: The aim of the study was to determine if diabetes was an independent risk factor of perioperative complications after elective abdominal gynecologic interventions.

MATERIAL AND METHODS: The study group included 62 women (the diabetic and the control group) hospitalized in the 3rd Department of Gynecology, Medical University in Lublin, Poland who underwent elective abdominal gynecologic surgery from 01 January 2002 to 31 December 2009. The diabetic group comprised 31 women with known diabetes; the control group - 31 patients without diabetic history. The patients in each group underwent the following procedures: 81%- total hysterectomy, 6% supracervical hysterectomy, 13%- adnexectomy by laparotomy. In the case of every patient, the period from the day prior to the surgery until the day of discharge from the hospital was evaluated.

In order to determine if diabetes was an independent risk factor of perioperative complications the patients from the control group were pair-matched to the diabetic patients using the following criteria:

- the same gynecologic diagnosis,
- the same gynecologic procedure in the same operating room,
- similar age (+/- 5 years),
- similar body mass index (BMI) (+/- 5 kg/m2) ,
- the same gynecologic procedure- within the same time interval (+/- 6 months).

RESULTS: No significant differences between diabetic patients and corresponding patients from the control group were found in terms of the number of complications, postoperative hemoglobin decrease, rise in body temperature, use of antibiotics, or length of stay in hospital (see Table 1).

Table 1. Comparison of parameters of perioperative period between diabetic patients and corresponding patients from the control group

Diabetic vs control group				
Number of complications	Hb loss	Temperature rise	Antibiotics	Length of stay in hospital
OR=1.60	OR=1.40	OR=0.50	OR=2.00	
CI=0.52-4.89	CI=0.44-4.40	CI=0.15-1.66	CI=0.38-2.66	P=0.23
P=0.42	P=0.58	P=0.27	P>0.99	

OR- odds ratio; CI- confidence interval; statistic significance at P<0,05; 1: Hb loss - hemoglobin loss after surgery of at least 1 g/dl compared to the hemoglobin level before surgery; 2: rise in body temperature above 37,5˚C on the II nd day after the surgery or in the following days; 3: use of antibiotics postoperatively apart from standard perioperative antibiotic prophylaxis; 4 : length of stay in hospital after gynecologic procedure in days

Table 2. Percentage distribution of perioperative complications in patients with diabetes

Complication	% of patients with diabetes	% of patients from control group
Urinary tract infection	4,4	1,1
Impaired wound healing	4,4	4,4
Bleeding complications	2,2	0
Cardiologic complications	1,1	1,1

CONCLUSION: In the examined group of patients who underwent gynecologic abdominal interventions diabetes was not an independent risk factor of perioperative complications.

Good pre-operative glycemic control and keeping blood glucose in intra and postoperative time within normal ranges results in the reduction of complications in diabetic patients to the level typical of non-diabetics .

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